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CANADA'S RAILWAY PROBLEM
AND
ITS SOLUTION

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BY
W. F. TYE, C.E.

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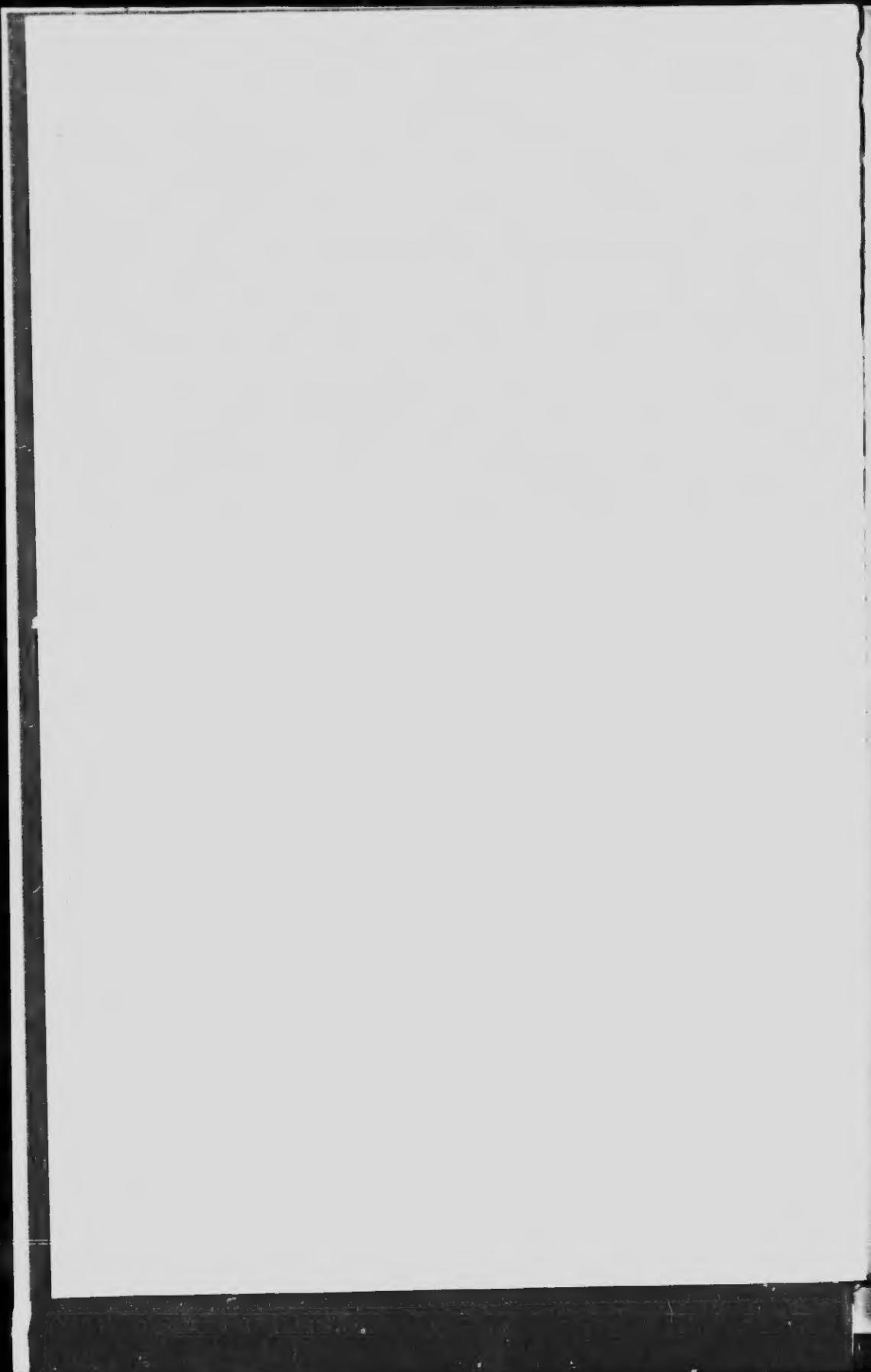
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BY

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CANADA'S RAILWAY PROBLEM AND ITS SOLUTION

After a great deal of study of Canada's railway problem, the writer of this paper has arrived at the following conclusions:

CONCLUSIONS:

1. The National Transcontinental, the Grand Trunk Pacific and the Canadian Northern Railways are unable to earn their operating expenses and their fixed charges. Canada has built, and is operating, the first of these roads, and Canada and the various Provinces have guaranteed the principal and interest of most of the bonds of the other two.

As the roads are unable to earn their fixed charges they must, of necessity, be paid by the country.

2. The failure of these roads is due to the duplication of lines by all the Railways, encouraged and bonused by the Government; to the excessive cost of the Grand Trunk Pacific and National Transcontinental Railways; to the failure of the Grand Trunk Pacific to provide itself with an adequate system of feeders in the West; and to the construction, by the Canadian Northern, of the long and unproductive stretches of road in British Columbia and Northern Ontario, without feeders, terminals, etc.

3. If the Canadian Northern, the Grand Trunk Pacific and National Transcontinental be maintained in two separate systems, it will cost at least \$400,000,000 to build the necessary branch line feeders and terminals, to provide them with adequate rolling stock, and put them in proper physical condition to compete with the Canadian Pacific.

4. It will be necessary that the Grand Trunk Pacific build five to six thousand miles of feeders in the West.

5. It will be necessary that the Canadian Northern build two to three thousand miles of feeders in the East, and terminals costing many millions in Montreal, Toronto, Ottawa, Quebec and Vancouver.

6. Canada has already sufficient railway mileage for years to come. The additional mileage necessary for these roads could only be had by duplicating existing lines. Such duplication of lines would only add to the burden to be borne by Canada in the way of subsidies, guarantees, etc., without doing the country any good.

7. Canada has sufficient railway mileage and traffic for two good transcontinental systems,—the Canadian Pacific and another—but has not enough for three.

8. A consolidation of the Grand Trunk, the Grand Trunk Pacific, Transcontinental and Canadian Northern railways would give a well-balanced system. The Grand Trunk has an excellent system in the East, with terminals in all large and important centres. The Canadian Northern has not. The Canadian Northern has a good system of feeders in the West. The Grand Trunk has not. Each is strong where the other is weak. Combining them must, of necessity, be the most economical and efficient way of handling the situation.

9. Such a combination would not require more than \$100,000,000 to provide it with sufficient rolling stock and to put it in proper physical condition to compete with the Canadian Pacific.

10. The saving in capital cost would be at least \$300,000,000, and, at present rates of interest, the saving in fixed charges at least \$15,000,000 per annum.

11. The Transcontinental cost \$100,000 per mile to build. The parallel Canadian Northern cost less than \$50,000 per mile, and is, in every way, as efficient an instrument of transportation. The Quebec Bridge, with approaches, will cost \$40,000,000, and will not be necessary for many long years to come.

12. The Transcontinental, inc' ding the Quebec Bridge, has cost Canada at least \$100,000,000 more to build than it would have cost the Canadian Pacific to build as efficient a road.

13. Including operating expenses and fixed charges, it costs the Canadian Pacific about \$70 to do \$100 worth of business. Including operating expenses and interest on cost, it costs the Intercolonial and the other Canadian Government roads from \$200 to \$220 to do \$100 worth of business.

14. Canada should follow the wise example set by Sir John Macdonald when dealing with the Canadian Pacific in 1879-80, and form a new private Corporation, with sufficient power, and the necessary safeguards, to take over and consolidate the Grand Trunk, Grand Trunk Pacific, Transcontinental and Canadian Northern Railways and develop another Canadian Pacific, rather than to have the Government take them over and develop another and a vaster and more expensive Intercolonial.

15. Conditions for the formation of such a Company are much more favorable than they were in 1880, as Western Canada had not then been proven, as it since has been, to be capable of supporting a large and prosperous population.

16. Such a combination would start with gross earnings of at least \$100,000,000 per annum, with a probable average increase of 8% per annum, and probable net earnings of from \$25,000,000 to \$30,000,000 per annum, and a net revenue from other sources of about \$2,800,000.

17. Its Fixed Charges at consolidation would be about \$35,000,000, and it would be under the necessity of spending, in the first five to seven years, at least \$100,000,000 to provide rolling stock, and to put its properties in good physical condition.

18. Deficits for some time to come would be inevitable, owing to the heavy fixed charges amounting to about \$35,000,000, as compared with \$10,300,000 per annum for the Canadian Pacific.

19. As these Fixed Charges are caused by the excessive cost of government construction, and by application of lines, bonused and guaranteed by the Government, Canada must pay them.

20. The Fixed Charges would be at least \$15,000,000 less with one private system than with two, and very much less with private than with Government management.

21. With such a combination as has been outlined, the series of deficits should not last more than five to ten years, after which the road should be very successful.

22. In order to control its policy, and to share in its certain prosperity, Canada should have an interest in the new Company. The Dominion Government should furnish 40% of the money required, own 40% of the stock, appoint 40% of the directorate, but take no part in the actual management. This would give all the advantage of government control without any of the manifest disadvantages of Government management.

23. Once this combination was successful, Canada should once and for all abandon the vicious policy of bonusing railway construction, either by gifts of money or land, or by the still more vicious policy of guaranteeing the bonds of Railway Companies of which it has no direct control.

The reasons for arriving at the foregoing conclusions are set out in the following pages:

CANADIAN
RAILWAY
PROBLEM:

The Canadian Railway problem is mainly connected with the Transcontinental Railways. The Canadian Northern and Grand Trunk Pacific Railway Companies have reached a point where it is not possible for them to pay their Fixed Charges or to finance their obligations. As the various Canadian Governments have guaranteed the greater portion of the bonds sold to provide money for their construction, it is necessary for the Government to either take them over, very largely aid the Companies, or find some other method of solving their difficulties. The National Transcontinental, built and operated by the Government, does not earn operating expenses, let alone fixed charges.

FINANCIAL CONDITIONS OF THE RAILWAYS. In order to arrive at a clear understanding of the problem, it is first necessary to briefly set out the financial situation of each Company concerned.

CANADIAN PACIFIC.

The Canadian Pacific extends from St. John, N.B., on the East to Vancouver on the West.

Its mileage is made up of:

Main Line, Montreal to Vancouver,	2899 miles
Other lines, branches, etc.	10094 "

Total	12993 "
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The Annual Report of the year ended June 30, 1916, shows the following financial results of its operation for the year:

Gross Earnings.....	\$129,481,885
Working Expenses.....	80,255,965
Net Earnings.....	49,225,920
Fixed Charges.....	10,306,196
Surplus.....	38,919,724
Surplus revenue.....	36,271,435
In addition it had:	
Other income.....	9,940,955
Making the total available for dividends.....	46,812,390

The Grand Trunk System extends from Quebec and Portland on the East, to Chicago on the West, and to North Bay on the North.

Its mileage consists of:

GRAND TRUNK SYSTEM.

Miles of roadway.....	4792 miles
Second track.....	1060 "
Total.....	5852 "

The Annual Report for the year ended Dec. 31, 1915, shows the following results for the System:

Gross Receipts.....	£10,379,493
Working Expenses.....	8,289,476
Net traffic receipts.....	2,090,017
Net Revenue.....	2,540,701
Total Fixed Charges.....	2,030,017
Surplus for year.....	£ 510,684
Equivalent to.....	\$ 2,487,031

**GRAND
TRUNK
PACIFIC.**

The Grand Trunk Pacific extends from Winnipeg on the east to Prince Rupert on the West.

Its mileage consists of:

Main Line.....	1746 miles
Branches.....	1009 "
Total.....	2755 "

The financial results of its operation for the years ended June 30, 1915 and 1916, as shown by Railway Statistics of the Dominion of Canada, were as follows:

1915

Gross Earnings.....	\$6,660,584
Operating Expenses.....	7,383,665
Operating Loss.....	723,081
Total net Loss.....	626,940
Fixed Charges.....	6,385,604

Which would make total loss for Year..... \$7,012,544

1916

Gross Earnings.....	\$6,963,189
Operating expenses.....	5,902,844
Operating Revenue.....	1,060,345
Net Revenue.....	1,070,904
Fixed Charges.....	6,600,644

Which would make total loss for Year..... \$5,529,740

In the Railway Statistics, from which the foregoing were taken, the Fixed Charges of the Grand Trunk Pacific (alone of all the private-owned roads) are not given. The bonds outstanding for the year ended June 30, 1915 are given as..... \$168,405,710. and for year ended June 30, 1916 as..... \$173,782,100.

It is understood that of these outstanding bonds £7,200,000 bear 3%, the balance 4% interest, which would make the Fixed Charges as shown.

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NATIONAL
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RAILWAY.

The National Transcontinental Railway extends from Moncton on the East to Winnipeg on the West,

Its mileage consists of:

Main Line.....	1799 miles
Branches.....	194 "
Total	1993 "

The financial results of its operation for the year ended June 30, 1916, were as follows, all figures, except interest on cost, being taken from the Dominion Railway Statistics:

Gross Earnings.....	\$5,798,518
Operating Expenses.....	5,369,063
Net Earnings.....	429,454
Net Revenue.....	467,135
Other Expenses.....	808,751
Loss from Operating.....	341,616
Interest on cost to date at 3%.....	5,732,052

Which would make total Loss for Year..... \$6,073,668

Fixed Charges of Government-owned Railways are not given in the Dominion Statistics. They were arrived at in the following manner:

The Stanton-Gutelius Report shows the cost of the Transcontinental to 1914, to be..... \$180,000,000.

Figuring interest on this sum, and adding the deficits year by year, shows the cost of the Transcontinental, exclusive of equipment, to be, in 1916..... \$191,068,400

Interest at 3% (the rate required by the Act) on this amounts to..... \$ 5,732,052
which is, therefore, taken as the Fixed Charges.

The Intercolonial extends from Halifax on the East to Montreal on the West and is owned and operated by the Dominion of Canada.

Its mileage consists of:

Main Line.....	797 miles
Branches.....	694 "
Total	1491 "

The financial results of its operations for the years ended June 30, 1913 and 1915, were as follows, all figures, except interest on cost, being taken from the Dominion Railway Statistics.

	1913
Gross Earnings.....	\$12,349,296
Operating Expenses.....	12,510,312
Operating Loss.....	161,016
Interest on cost to date.....	13,160,808
Which would make total loss for Year.....	13,321,824
	1915
Gross Earnings.....	\$11,259,710
Operating Expenses.....	11,348,756
Operating Loss.....	89,046
Other Income.....	180,778
Operating Income.....	91,732
Interest on cost of Construction to date.....	14,485,929
Which would make total Loss for Year.....	14,394,197

The cost of construction, including interest, not being given for Government roads, this cost was taken from a series of most admirable articles on the Intercolonial, written by Mr. Samuel O. Dunn, Editor of the "Railway Age Gazette". Mr. Dunn shows the actual cost, including interest of the Intercolonial, was as follows:

1912	\$314,061,270
1913	329,020,209
1914	348,089,518
On the same basis the cost in 1915 would be:	
1915	\$362,148,221

Interest at 4% which Mr. Dunn estimates is the average paid by the Intercolonial, amounts to:

1913	\$13,160,808
1915	14,485,929

The Canadian Northern extends from Quebec on the East to Vancouver on the West, and has, in addition, a small disconnected system in Nova Scotia.

CANADIAN NORTHERN.

As shown in the Railway Statistics, it had, in 1915, a mileage of:

Main Line.....	1177 miles
Other Lines and Branches.....	6766 "
Total	7943 "

It had, at that date, under construction 1538 miles of line, making its present mileage 9481 miles.

The Railway Statistics before quoted show the financial results of its operation for the year ended June 30, 1916, to have been:

Gross Earnings.....	\$35,476,275
Operating Expenses.....	25,244,187
Operating Revenue.....	10,232,088
Operating Income.....	9,490,580
Fixed Charges.....	10,391,163
Net loss.....	900,583

The foregoing shows a net loss of a little over \$900,000. It is, however, believed that the road has large floating liabilities, and at the date at which the foregoing statistics were submitted, that many miles of newly constructed lines had not as yet been taken into the System, and that when its finances are put on an operating basis, that the fixed charges will be materially larger. In the following discussion it is assumed that re-organization of its finances and completion of construction, will add \$3,000,000 to its Fixed Charges, making them \$13,400,000 per annum, but, at this date, no figures are available to prove or disprove this assumption.

From the foregoing it will be seen that the Canadian Pacific has been a great financial success.

The Grand Trunk has been a moderate financial success: the Canadian Northern has been a financial failure; and the Transcontinental, the Grand Trunk Pacific and the Intercolonial have been great financial failures.

The problem which now confronts Canada is to find a remedy for the unsatisfactory state of affairs shown by all the roads, except the Canadian Pacific.

CAUSES OF FAILURES.

Before it is possible to arrive at the cure, one must understand what are the reasons which have caused the trouble.

Canada may be compared with the Siamese Twins—two bodies, the East and the West, commercially united by a narrow ligature—the railways. The long stretch of country extending from about Sudbury to near Winnipeg, a distance of nearly

1,000 miles, is practically barren as far as local traffic concerned, and a big drag on the earnings. Each of the two bodies, the East and the West, is very large in size, and, as yet, sparsely settled. So the railways in each body have a somewhat thin traffic local to that body and in addition, the transcontinental lines have a through traffic from one to the other, which must be carried across nearly 1,000 miles of practically unproductive territory.

It is thus necessary that any railway connecting the two bodies have an extensive system in each, not only in order to get its fair share of the traffic in each of the two bodies, but also to gather traffic in one to carry to the other, to enable it to pay the cost of operation on the long unproductive stretch through Northern Ontario.

The Grand Trunk, which is entirely local to the East, has always been moderately successful. It has been expensively constructed and financed. It has been controlled from London, a point too far away for effective control. It has had no opportunity to take part in Canada's greatest development which has gone on in the West, and has, therefore, been only moderately successful.

The Grand Trunk Pacific and the Transcontinental, which really form one system, have been built without any regard to the principles which underlie the economics of railway location and construction. The first essential for any railway is that it get traffic, as without traffic it cannot live, no matter how cheaply or inexpensively it be built, and this cannot be had without an extensive system of feeders. These two roads spent huge sums in building main lines far in advance of their present requirements, and very little on feeders or branch lines. The result is, 3,550 miles of very expensive main lines, and only 1,200 miles of branch line feeders,—fixed charges equal to gross earnings and a cost on each road of about \$200 to do \$100 worth of business.

The Canadian Northern was built, first as a Western road, and while it remained a purely western road was very successful, but it, too, caught the mania for a through Transcontinental Railway. It, too, built a long expensive line across the unproductive country between Montreal, Toronto and Winnipeg, without, at the same time, building an adequate system of feeders and terminals in the East with which to gather traffic for the West, and to support the long unproductive mileage in Northern Ontario.

The Canadian Pacific, on the contrary, was developed along the proper lines. It built its main line as cheaply as possible, used the funds which it saved by this class of construction rather than the expensive construction indulged in by the Transcontinental and Grand Trunk Pacific Railways, in building a system of feeders in the West and in the East. In this way it had the maximum of traffic and the minimum of Fixed Charges, instead of the minimum of traffic and the maximum of Fixed Charges, as the Transcontinental and Grand Trunk Pacific have.

As traffic developed and conditions warranted, the Canadian Pacific Railway improved its lines, thereby making a double saving of: first, the interest on an excessive first cost during the many years of meagre traffic, and, second, the very much lesser cost of doing work on a constructed line rather than in a wilderness many miles from a railway or other transportation.

The Intercolonial's troubles have been those inherent in all Government management,—excessive cost of construction, expensive management, and low freight rates.

SUGGESTED REMEDIES.

To remedy this matters, many different suggestions have been made. These may be summarized as follows:

- 1st: Transferring the Canadian Northern, Grand Trunk Pacific and Transcontinental to the Canadian Pacific.
- 2nd: Government ownership of some, or all, of these railways.
- 3rd: Aiding the Canadian Northern and Grand Trunk Pacific Railways until such time as they become profitable.
- 4th: The remedy which the writer advocates: Consolidation of the Grand Trunk, Grand Trunk Pacific, Transcontinental and Canadian Northern in one system, under a new Company to be formed.

The first of these, viz: disposing of the Canadian Northern, Grand Trunk Pacific and Transcontinental to the Canadian Pacific might be an ultimate financial success provided that Company were willing to assume the risk, but it is open to the fatal objection that it would entirely do away with all competition, which is absolutely necessary in any business. This remedy may, therefore, be dismissed without further discussion.

GOVERNMENT OWNERSHIP.

It does not seem possible that any one who has given serious thought to the matter can be in favor of Government ownership of such an extensive system, more especially in a country so dominated by politics as is Canada. One can easily imagine what the result would be: before the first election a cry would go up for lower rates, which the politicians, to suit their needs, would grant. This would result in deficits such as have been so common on the Intercolonial. These deficits and the fixed charges would have to be met by taxation. The Canadian Pacific would have to meet the Government rates, which would surely result in the bankruptcy of that road, or its being taken over by the Government.

If all the roads were nationalized the cost would be far too much for the country to finance. There would be an entire lack of competition which is disastrous to any business. There would be a lack of continuous management, as each party as it attained power would want to reward its own politicians by giving them the best positions on the railways, and the best men would not be selected.

The large army of Government appointees necessary to run such a great mileage would be a grave danger to the purity of our elections.

The writer knows of no system of Government-owned railways that has been really successful. The German railways have been apparently the most successful. But their success has been much more apparent than real, as they have been run not as a commercial, but as a huge military machine. Before the war many hundreds of miles of double track roads were in existence, with insufficient business for a single track. Money was supplied, without stint, to keep them in first-class military shape, all of which gave them an appearance of prosperity and good management, while, in reality, they were not so economically managed as the English roads.

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GOVERNMENT MANAGEMENT IN CANADA.

Our experience of Government-managed railways in Canada has not been such as to justify us in such a gigantic addition to our public responsibilities. We have now five Government-owned roads in Canada, and not one of them has earned interest on its cost, and only one, (The Temiskaming & Northern Ontario Railway) has earned its operating expenses.

A short examination of the Transcontinental and the Intercolonial Railways is illuminating.

CONSTRUCTION OF THE TRANS- CONTINENTAL.

The Transcontinental was built by a Commission without experience in the construction or operation of railways.

The Stanton-Gutelius Commission appointed to investigate its construction, shows that its cost to 1914, exclusive of any rolling stock, amounted to \$99,500 per mile. At the same time this road was being constructed, the Canadian Northern Railway

Company built a parallel road for exactly the same purpose, viz. to connect the eastern and western systems. This road is, in every respect, as efficient an instrument of transportation as is the Transcontinental, and its cost certainly did not exceed \$50,000 per mile.

The Quebec Bridge is a link in the Transcontinental System. With the necessary approaches it has cost \$40,000,000, and was decided on and built without any consideration as to its economic value.

Train ferries, which could have been built for a small fraction of its cost, would have served every purpose for many years to come, and would have taken the traffic directly through Quebec, much to that city's advantage. Until a few years ago similar ferries handled all the traffic from the west into New York, and all the traffic across the Detroit and St. Clair Rivers. They are to-day handling all the traffic into San Francisco except that from the South.

It is quite safe to say if the Transcontinental Railway, including the crossing of the St. Lawrence River, had been built by the Canadian Pacific Railway Company, its cost would have been at least \$100,000,000 less than as built by the Dominion Government.

**COST OF
OPERATION
ON THE
INTERCOLONIAL**

The Intercolonial is the most extensive public-owned system on the Continent.

As shown in the beginning of this paper in the year 1913 (which was a very favorable one for the Intercolonial) it cost the owners of this road—the people of Canada—including interest on the cost:

cost: \$25,832,136

to earn: 12,349,296

while it cost the owners of the Canadian Pacific (the shareholders):

to earn: \$ 90,562,161

or, in other words, on the Intercolonial, it cost \$209 to do \$100 worth of business, while on the Canadian Pacific it cost \$70 to do worth of \$100 business.

**FREIGHT
RATES.**

It is usually supposed that the low rates charged are responsible for this condition.

Let us see just how these rates do compare:

The latest tariffs—both passenger and freight—show that on all business, not purely local, the rates are exactly the same. This is, of necessity, true, as such rates are fixed by competition, and not by the needs of a political party. The private-owned competing road, which is much shorter, or the water-carriers, set the through rates and the Intercolonial must follow.

The through rates per mile are undoubtedly much lower on the Intercolonial, but this is because it is so much longer, the distance from Montreal to St. John being 740 miles by the Intercolonial, and 480 miles by the Canadian Pacific Railway, and from Montreal to Moncton by the Intercolonial 651 miles, and by the Canadian Pacific 572 miles.

In purely local and non-competitive business, the freight tariffs show the Class rates, as follows: As nearly as possible similar conditions and distances were selected so as to make a fair comparison.

MAIN LINE

Canadian Pacific St. John to:	Miles	Basic Rate per 100 lbs.	Inter- U.S. rail St. John to:	Miles	Basic Rate per 100 lbs.
Grand Bay	9.9	10¢	Rothsay	9.5	10¢
Westfield	13.9	12¢	Quispamsis	12.0	12¢
Welsford	23.8	16¢	Hampton	22.0	16¢
Enniskillen	34.3	20¢	Apohaqui	39.3	20¢
Macad. m	84.3	32¢	Moncton	89.3	30¢
St. John to		Moncton to			
Megantic	329.0	54¢	St. Fabian	328.2	48¢
Sherbrooke	373.0	54¢	Tobin	349.9	48¢
Magog	393.4	58¢	Rivière Ouelle	408.6	54¢
Adirondac Jct	472.7	58¢	Chaudiere	497.0	54¢
			St. Nicolas	501.0	58¢
			St. Lambert	644.4	58¢
			Levis	488.4	54¢
Foster	412.2	58¢	Drummondville	586.4	58¢

BRANCH LINE RATES:

McAdam to:	Miles	Basic Rate per 100 lbs.	Truro to :	Miles	Basic Rate per 100 lbs.
Cottrell	6.6	10¢	Union	8.4	10¢
Benton	33.1	20¢	Hopwell	34.6	20¢
Newburg	55.3	26¢	Merigonish	56.1	24¢
Florenceville	74.9	30¢	James River	74.9	28¢
Aroostook	105.7	36¢	Lenwood	108.6	32¢
Grand Falls	124.8	36¢	Mulgrave	122.3	34¢
Edmundston	168.8	42¢	McKinnon	162.3	36¢

It will be seen that for distances up to about 35 miles, the rates are identical; for distances of 35 to 75 miles, C.P.R. rates are about 7½% higher than on the Intercolonial; from 100 to 125 miles, they are about 12% higher; on distances of 165 miles 17% higher; on distances of 320 to 350 miles 12½% higher; on distances of 400 to 475 miles 7½% higher, or an average of about 10%.

The rates from St. John or Moncton to points in the same longitude, such as Levis on the Intercolonial, and Megantic on the Canadian Pacific; or to Drummondville on the Intercolonial and Foster on the Canadian Pacific, are the same, though they are much less per mile on the Intercolonial, showing the very bad effect of the long uneconomical location of the Intercolonial as compared with the Canadian Pacific Railway.

In the Commodity Tariffs, the rates per mile quoted are exactly the same.

In the case of bituminous coal, of which the Intercolonial handles a large tonnage, the through-rates are fixed by the water-bourne traffic. In strictly local business, the Intercolonial rates from such points as Sydney, are practically the same, as Canadian Pacific rates on American coal, from such points as Adirondac Junction up to a distance of about 100 miles. Beyond that distance the Canadian Pacific rates are higher in about the same proportion as in the Class rates.

On cement, all of which originates on roads other than the Intercolonial, the rates from Montreal to all New Brunswick points are the same, on local business out of Montreal the Canadian Pacific rates per mile are the lower.

It thus appears that on all through or competitive business, on all business originating on or destined for other lines, the rates are fixed by agreement, and are the same. On all purely local business not affected by other competition, the Canadian Pacific rates per mile are apparently on an average about 10% higher, some portion of this being due to the uneconomical location of the Intercolonial.

Canadian Government railway statistics do not divide traffic between competitive and non-competitive, but they do show that in 1913, 36% of the traffic originated on other roads. When we add to this the amount destined to other roads, and that between competitive points, it seems a fair statement to make that at least 50% was competitive business, and, therefore, at the same rates as private companies gave.

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In 1913 the freight earnings were	\$8,206,110
The total saving to the shippers would be 10% of half of this.....	410,306

The passenger tariffs show much the same conditions as the freight tariffs. Competitive business is at the same rates regardless of distance. Local rates per mile for short distances are practically the same, but gradually drop on the long round-about route via the north of New Brunswick, and as they approach the competitive points, where the total rates must inevitably be the same.

As in the case of the freight tariffs, in strictly non-competitive local business, the Canadian Pacific passenger rates per mile appear to be on an average about 10% higher than those of the Intercolonial.

There is no way in which the amount of business effected can be ascertained, but it is believed it cannot be more than 50% of the total gross passenger earnings.

In 1913 the total gross passenger earnings amounted to	\$4,037,531
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The total saving to the travelling public would be 10% of half of this.....	201,687
or a total saving for passengers and freight of.....	611,993

In 1915 the total saving would be.....	512,513
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The results for 1913 and 1915 are thus:

1913

Gross earnings.....	\$12,349,296
Actual cost including, interest.....	25,832,136
Saving by lower rate.....	611,993
Net Cost.....	25,220,143
Cost for each \$100 earned.....	204.20

1915

Gross earnings.....	\$11,259,710
Actual cost, including interest.....	25,653,907
Saving by lower rates.....	512,513
Net Cost.....	25,141,394
Cost per each \$100 earned.....	220.60

The justification put forward for this remarkable state of affairs, is that the Intercolonial was built for political purposes to bring the Maritime Provinces into Confederation, and any attempt to make the road pay would be looked upon as breaking faith with the people of the Maritime Provinces, who look upon the Intercolonial as an offset to the Canals in the Upper Provinces, which are operated without any tolls. It must not be forgotten that the Canadian Pacific, too, was built for a political purpose, to bring British Columbia into Confederation, and it has been as great a financial success under private management as the Intercolonial has been a failure under Government management.

Whether the reasons advanced for the failure of the Intercolonial be sufficient or not, they certainly do not apply to the Western roads, and there are no similar questions to complicate the problem of how best to dispose of the transcontinental lines.

We have thus seen that both Government construction and management have been extremely extravagant and wasteful. While Canada has been rich enough to stand such wasteful and extravagant methods, when applied to a small road like the Intercolonial, it could not possibly stand them when applied to the huge transcontinental systems.

PROPOSED CON- SOLIDATION.

CANADA SHOULD FOLLOW EXAMPLE SET BY SIR JOHN MACDONALD.

The remedy which the writer proposes for this state of affairs, and the only one which he believes has any hope of success, is to combine the Grand Trunk, Grand Trunk Pacific, the National Transcontinental and Canadian Northern under one company.

Canada now stands at the parting of the ways, just as she did in 1879. The grave question then at issue was whether the Canadian Pacific should be constructed and managed by the Government, or by a private corporation. No one looking at the question now can fail to be struck by the wisdom displayed by the greatest of all Canadian statesmen, Sir John Macdonald, when he decided that the road should be turned over to a private corporation.

Can any sane person imagine for an instant that any Government could have made anything like such a success as the Company has made of the Canadian Pacific? The same question is at issue to-day. Shall

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we follow the wise example set by Sir John Macdonald, organize a new company composed of men of the best financial and practical ability, give them the necessary safeguards and allow them to develop another Canadian Pacific, or shall we turn the roads over to the Government, knowing the wasteful and extravagant methods of Government construction and management, and develop another and vaster Intercolonial?

It should be no more difficult to get a private corporation of the very best class to take over our present roads, than it was for Sir John Macdonald. The present conditions are much more favorable. At that date neither the Canadian nor the American Northwest had been proved to be capable of supporting a large population. The only railways in the country north and west of St. Paul, were a small portion of the Northern Pacific which up to that time had proved to be a financial failure; the St. Paul & Pacific, some 400 miles in length, which only the year before had been taken out of the hands of the receivers and re-organized by Mr. Hill, under the name of the St. Paul, Minneapolis & Manitoba, and a few miles of the Canadian Pacific under construction west of Lake Superior.

Since that time the country has been occupied by such systems as the Northern Pacific, Great Northern, St. Paul, Minneapolis & Sault Ste. Marie, and the Canadian Pacific, among the most prosperous roads in the world; by thousands of miles of extensions of more southerly roads; by the Canadian Northern, prosperous as long as it remained a purely Western road, and by the only failures to date, the National Transcontinental and Grand Trunk Pacific Railways, and they are failures as the result of a standard of construction far in advance of their needs, and the lack of feeders without which no road can succeed.

The part of Western Canada traversed by the proposed combination is equal to that traversed by any Transcontinental road either in Canada or in the United States, and is decidedly superior to that traversed by most of them.

So far, Western Canada has hardly been scratched. In 1906 the whole grain output came from an acreage of less than 5% of the area within 5 miles of the Canadian Pacific lines, and at the present time it comes from an acreage of less than 10% of the arable land in the three prairie provinces. The writer does not see how there can be the faintest doubt as to the ultimate success of the proposed consolidation, if put into the hands of a strong private corporation, when one takes into consideration the character of the country, its similarity to the country

traversed by the other successful American and Canadian Railways, the continued and rapid increase in the traffic of the whole Canadian Railway System, and the fact that most of the other roads, in the same or similar territory, have had similar troubles, and that they are now, in a very few years, among the most successful roads in the world.

**IMMEDIATE
SUCCESS
IMPOSSIBLE.**

The Consolidation could not hope to be financially successful at first as the Net Revenue could not possibly be sufficient to pay the Fixed Charges, and a series of deficits are sure to result. These deficits, I believe, would not extend over a period of more than 8 or 10 years at the most.

The necessary capital should be raised by an issue of common stock, with a guarantee of 5% interest for ten years, by the Canadian Government, the amount guaranteed being limited to say, \$200,000,000. The legislation constituting the Company should be on the samelines as that which constituted the Canadian Pacific, that is, it should be an actual contract between the Government and the Company, setting forth in detail the respective rights of each party. One of the clauses in this contract should be (as was in the Canadian Pacific contract), that until such time as the Company was earning 10% on the actual cost to it of the road, equipment, etc., the Government should have no right to regulate rates.

As the various governments, Dominion and Provincial, have guaranteed most of the cost of the lines forming the proposed combination, they should be willing to agree to these terms, as if the Company could not meet its Fixed Charges the government would have to meet them.

The situation has arisen owing to the unwise policy of duplication of lines, encouraged and bonused by the Government, and to its extravagance in construction. If there is a penalty to be paid for the indulgence in this policy, the country must be the one to stand it. It is sure and certain if the Government nationalizes the roads and assumes the management, that the deficits will be many times as great as if the roads be operated by a private company, and in this event the deficits would have to be met by the Government. Canada should be well satisfied to get out of this mess by paying deficits, if such there be, for a few years. It is quite in line with what we have been doing ever since Confederation, first of all, giving money and land, then money only, and lately, and worst of all, guaranteeing bonds for the construction of railways.

A new company sufficiently strong to finance such a consolidation should be formed to take them over. In this new Company the Government should have a 40% interest, should own 40% of the stock, furnish 40% of the money, have 40% of the directorate, should have an active voice in the policy, but should not have any say in the actual management of the road.

This would give the Government a direct voice in the policy of the road, would enable it to mould its future, and would give all the benefits, without any of the evils, of Government ownership.

At present time there is only one place--New York-- where the bulk of the money for such an enterprise could be secured, but there seems to be no reason why at least 11% or 12% should not be raised by private capital in Canada. With 40% held by the Government and at least 11% or 12% by private Canadian capital, the actual control would be in Canadian hands.

If such a combination were made the roads should be connected in several places. The most important would be, as shown on the map, in Northern Ontario, at some point east of Lake Nepigon, probably from the north end of Long Lake on the Canadian Northern, to a point near Titania on the Transcontinental. The map shows how this connection would give the shortest and most direct route from Winnipeg to Montreal and Toronto. They would also have to be connected at the Yellow Head Pass where they are side by side; at Montreal; at some point, say, Napanee, on the lines between Toronto and Ottawa, and, no doubt, at many points on the prairie.

The Main Lines would then be: (As shown on attached map).

Prince Rupert to Quebec and Moncton.

Grand Trunk Pacific and National Transcontinental.

Vancouver to Montreal and to Toronto.

Canadian Northern, Vancouver to Yellowhead Pass; Grand Trunk Pacific, Yellowhead Pass to Winnipeg; National Transcontinental, Winnipeg to Titania; new line to be built, Titania to Long Lake and Canadian Northern Long Lake to Montreal and to Toronto.

**MAIN
LINES.**

Toronto to Ottawa.

Grand Trunk from Toronto to, say, Napanee, and Canadian Northern from Napanee to Ottawa; The various main lines of the Grand Trunk would remain the same.

Such a combination would have a first-class system in Ontario and the East, reaching every important center, a main line to Chicago, with good local branches in Michigan, a main line to Portland (the natural winter port of Canada)—the shortest line to St. John and Halifax (the two Canadian winter ports); a good connection with the New England States by way of the Central Vermont; a very good local system in the prairie provinces,—Manitoba, Saskatchewan and Alberta, and, by far, the best line across the mountains connecting the Pacific ports with the prairie provinces.

There are many advantages which would be had from the consolidation which cannot be had separately.

ADVANTAGES OF CON- SOLIDATION.

Main Line distance reduced.

The following table, giving the mileages from different points in the East to Winnipeg and Vancouver, shows how the distance could be reduced below similar distances on the individual roads and how the new mileage would compare with the Canadian Pacific. In the case of St. John to Winnipeg, a new line down the St. John Valley would be necessary to get the reduction in distance if such a connection were found to be desirable.

Railway	Montreal to Winnipeg	Toronto to Winnipeg	Quebec to Winnipeg	John to Winnipeg	Halifax to Winnipeg	Portland to Winnipeg	
Can. Pacific.....	1411.6	1232.3	1563.4	1882.0	2157.2	.....
Can. Northern....	1455.7	1312.5	1607.5	.....	.....	.....
Grand Tr'k, Grand Trunk Pac. Nat.							
Transcontinental..	1425.0	1255.9	1350.3	1804.0	1990.7	1719.3	
Proposed Consol'n	1347.7	1204.5	1350.3	1804.0	1990.7	1645.0	

	Winnipeg to Vancouver	Edmonton to Vancouver	Eamonton to Vancouver	Montreal to Prince Rupert	Toronto to Vancouver	
Can. Pacific....	1483.5	840.5	.....	2895.1	2715.8	
Can. Northern..	1599.7	.....	.....	3055.4	2912.2	
Grand Tr'k, Gr. Tr. Pac. Nat.						
Transcontinental	1760.6	967.7	953.2	3185.6	3016.6	
Proposed Consol'n	1555.9	763.0	.....	2903.6	2760.4	

	Quebec
	Vancouver
Canadian Pacific Ry.....	3046.9
Canadian Northern Ry.....	3207.2
Grand Trunk, Grand Trunk Pacific and National Transcontinental.....	3110.9
Proposed Consolidation.....	2906.2

Thus the distance from Montreal to Winnipeg would be 64 miles shorter than by the Canadian Pacific; 108 miles shorter than by the present Canadian Northern and 78 miles shorter than by the present Grand Trunk connection.

From Toronto to Winnipeg the new route would be 28 miles shorter than by the Canadian Pacific; 108 miles shorter than by the present Canadian Northern; and 51 miles shorter than by the present Grand Trunk connection.

From Winnipeg to Vancouver the new route would be: 44 miles shorter than by the present Canadian Northern; 205 miles shorter than the proposed Grand Trunk connection, and only 72 miles longer than the Canadian Pacific. For winter haul of wheat it would have a decided advantage over the Canadian Pacific as the distance from Winnipeg to St. John would be 78 miles shorter, and to Halifax 167 miles shorter than by that road, and the haul would be 237 miles shorter, by the new Consolidation, from Winnipeg to Portland than from Winnipeg to St. John by the Canadian Pacific. It would also decidedly improve the Grand Trunk Pacific connection between the Prairie Provinces and the Pacific, as the distance between Edmonton and Vancouver would be 190 miles shorter than the distance from Edmonton to Prince Rupert.

MAIN LINE GRADES.

Edmonton to Vancouver there would be no grades steeper than 0.7% against the Eastbound, and 0.4% against Westbound traffic.

The Main Lines, as now constructed, have many miles of 1% grades, or steeper.

The Grand Trunk from Montreal and Toronto to Cochrane has grades of 1% or steeper against both eastbound and westbound traffic.

The Main Line of the Canadian Northern in Manitoba, Saskatchewan and Alberta, and from Port Arthur to Winnipeg, has many grades of 1% or steeper, against both east and westbound traffic.

The Canadian Pacific has, on its Main Line between Montreal and Fort William, in Alberta, and from the Columbia River to Vancouver, many grades of 1% and steeper against both east and westbound traffic; and in the Rocky and Selkirk Mountains many miles of 2.2% grades against both east and westbound traffic.

Thus the new Consolidation would have the shortest line, and the best grades from all such points as Halifax, St. John, Portland, Quebec Montreal and Toronto to Winnipeg.

It would also have a shorter line, with much better grades than either the present Grand Trunk or Canadian Northern between Winnipeg and Vancouver, and while the Canadian Pacific would be eight miles shorter from Montreal to Vancouver, and 45 miles shorter from Toronto to Vancouver, the new route would have decidedly better grades, no snowslides, much less rise and fall, and would require less train-miles in its operation.

**LESS COST
TO
COMPLETE.**

The National Transcontinental and Grand Trunk Pacific, as now built, consist of a main line 3550 miles long, with only about 1200 miles of branches.

While the old Grand Trunk and the Inter-colonial furnish this route with good feeders in the East, it is absolutely essential, if it is to be made to pay as an independent line, that at least 5,000 to 6,000 miles of feeders be built in the West. It is practically impossible to build such a system of feeders without cutting deeply into the territory now served by the Canadian Pacific or Canadian Northern. Such duplication of lines would be absolutely useless as far as Canada, as a whole, is concerned.

The Canadian Northern, on the other hand, has a very meagre system of very badly placed branches in Ontario and Quebec, and if it is to be a success as an independent road, it must have such a system, which can only be had by duplicating and paralleling the Grand Trunk or Canadian Pacific, as, for instance, the useless duplication of lines along the North Shore of Lake Ontario, and the duplication, by the proposed Canadian Northern, from Toronto to Niagara, of the existing lines.

It is also essential, if it is to have an outlet for its winter business, that it reach a winter port,—which it does not do.

It has, on the other hand, in Manitoba, Saskatchewan and Alberta, about 5,500 miles of poorly-built roads, the Main Line being about Branch Line standard, and the balance of a still lower standard. If it is to be maintained as an independent organization, the whole Main Line from Port Arthur to the Mountains, will practically have to be re-built, which will cost a great deal of money.

TERMINALS.

Terminals in Montreal, Toronto, Ottawa and Quebec are for an independent Canadian Northern an absolute and very expensive necessity, all of which can be avoided by a combination with the Grand Trunk.

Plate 3 shows what an extensive network of branches, sidings and spurs, railways require in a city the size of Montreal, and what a meagre system the Canadian Northern as yet has. From it one can form an idea as to what a costly undertaking it will be for the Canadian Northern to provide such terminals, without which it cannot compete on even terms with the other two roads.

Relatively it is in the same position in Toronto, Ottawa, and Quebec.

Plate 3 also shows how easy it will be, when the Grand Trunk tracks into Bonaventure Station are elevated, for that road to connect with the proposed elevated tracks of the Canadian Northern, which, in turn, will connect with the Harbour Commissioners' tracks thus giving the Grand Trunk a short and direct connection with the East end, which it now lacks.

The Grand Trunk Pacific has a well-built main line, but practically no branches nor any place to put them.

The Canadian Northern has many thousands of miles of branch lines in the west, but no proper main line. Each line is thus strong where the other is weak, and it will, therefore, cost the least possible amount for new construction and betterments to combine the two.

**AIDING
INDIVIDUAL
ROADS
INADVISABLE.**

These extensions and improvements essential for the two roads, if separate, would cost not less than \$300,000,000, no matter how economically carried out, and would not do away with the necessity of making any of the other improvements mentioned later.

At present rates of interest this would mean an addition of \$15,000,000 a year to the Fixed Charges. As will be seen later, it will be some years before the roads, under the most favorable conditions, can earn their present Fixed Charges.

The addition of \$15,000,000 a year to those charges would make the task hopeless, and, therefore, the policy of aiding the roads individually and maintaining them in separate systems would not be advisable.

After the expenditure of this additional \$300,000,000 they would not be one whit better off, nor have any better facilities than under the proposed Consolidation, as each one, to get immediate results, must cut into the territory of the other or the Canadian Pacific. Each one would resent the intrusion of the other into its territory, as would the Canadian Pacific, and each one would retaliate. The result would certainly be another debauch of construction, such as the one from which we have not yet recovered. Canada, for the present, has more than enough railway mileage, and the only way to get results from these two systems is to combine them, as each is strong where the other is weak.

**PHYSICAL
CONDITIONS
OF
COMBINATION.**

When the combination went into effect it would find itself in this position: it would have better main lines than the Canadian Pacific and have a decidedly better system in Ontario and Quebec than that road; it would have about 6,500 miles of branches in the Prairie Provinces as compared with about 5,300 miles of branches owned by the Canadian Pacific. These branch lines are not so well placed as are those of the Canadian Pacific, but, nevertheless, they make a fairly comprehensive system. It would have good terminals in Quebec, Montreal, Toronto, Portland, Fort William, Port Arthur and Winnipeg, and all other important points except Vancouver. It should thus be well equipped to get its share of the business, but would, on the other hand, find itself face to face with certain large expenditures which would have to be made in the near future.

The greatest drawback to the immediate success of the proposed consolidation, is the excessive cost of construction of the National Transcontinental and the Grand Trunk Pacific, and to the policy of duplication of lines persisted in by the Companies, and encouraged by the Government by guarantee of bonds, etc. The Fixed Charges which must be met are, therefore, very high, amounting as they would for the proposed combination, to about \$35,000,000, as compared with \$10,306,196 on the Canadian Pacific.

The mileage of the combined roads would be as follows:

**MILEAGE
OF
COMBINATION.**

Grand Trunk	4792 miles
Grand Trunk Pacific	2755 "
National Transcontinental . . .	1993 "
Canadian Northern	9481 "
<hr/>	
Total	19021 "

Such a combination should be an ultimate success under proper management.

The factors which would determinate its success or failure are:

"Gross Earnings" at Consolidation;

Probable Increase in "Gross Earnings";

Additional Money Requirements;

The "Operating Ratio" or the ratio which the operating expenses bears to Gross Earnings and "Fixed Charges".

**GROSS
EARNINGS.**

The following tables show the Gross Earnings for the various roads for a sufficiently long period to demonstrate the probable rate of increase. These have been shown graphically on Plates 4 to 8.

CANADIAN PACIFIC.

Year	Gross Earnings	Operating Ratio
1905	\$ 50,481,882	69.35%
1906	61,669,758	62.75 "
1907	72,217,528	64.96 "
1908	71,384,174	69.47 "
1909	76,313,321	69.92 "
1910	94,989,490	64.38 "
1911	104,167,808	64.77 "
1912	123,319,541	64.89 "
1913	139,395,700	64.82 "
1914	129,814,824	67.32 "
1915	98,865,210	66.04 "
1916	129,481,884	61.96 "

An increase of 156.4% in 11 years.

GRAND TRUNK SYSTEM.

Year	Gross Earnings	Operating Ratio
1905	\$37,173,489	72.85%
1906	41,570,783	74.32 "
1907	44,922,847	76.37 "
1908	39,137,550	75.77 "
1909	41,786,300	71.72 "
1910	44,889,624	74.72 "
1911	48,713,372	77.29 "
1912	52,921,613	75.36 "
1913	56,860,708	76.87 "
1914	49,055,899	81.74 "
1915	50,548,131	79.86 "
1916	61,767,901	73.91 "

An increase of 66.2% in eleven years.

The Grand Trunk earnings for 1916 are an estimate only. The Company's Fiscal Year ends Dec. 31st. Figures showing the increases in Gross and in Net for the whole system are available for the first seven months, and for the Gross of the Grand Trunk Railway of Canada up to Dec. 21st, so the estimate should be reasonably close.

The Operating Ratio shown is that for the first seven months.

CANADIAN NORTHERN RAILWAY.

Year	Gross Earnings	Operating Ratio
1907	\$ 8,350,198	64.95%
1908	9,709,462	68.76 "
1909	10,581,767	66.30 "
1910	13,833,061	68.59 "
1911	16,360,712	69.50 "
1912	20,860,093	71.81 "
1913	24,277,478	72.10 "
1914	23,781,328	69.18 "
1915	25,912,106	72.72 "
1916	35,476,275	71.15 "

An increase of 324.9% in 9 years.

WHOLE CANADIAN RAILWAY SYSTEM.

Year	Gross Earnings	Operating Ratio
1905	\$106,437,198	75.2%
1906	125,322,865	69.5 "
1907	146,738,214	70.7 "
1908	146,918,314	73.0 "
1909	145,056,336	72.1 "
1910	173,956,217	69.2 "
1911	188,733,494	69.4 "
1912	219,403,753	68.7 "
1913	256,702,703	70.9 "
1914	243,083,539	73.6 "
1915	199,843,072	73.9 "
1916	259,000,000	70.0 "

An increase of 143.3% in 11 years.

The combined earnings of the Grand Trunk, the Grand Trunk Pacific, the National Transcontinental, and the Canadian Northern have amounted to:

Year	Gross Earnings	Operating Expenses	Net traffic Receipts	Operat'g Ratio
1913	\$ 89,300,391	\$68,487,926	\$20,802,465	76.7 %
1914	81,156,888	65,933,176	15,223,512	81.2 "
1915	83,401,709	66,934,468	16,467,241	80.3 "
1916	110,005,881	82,691,420	27,314,461	75.16 "

**ADDITIONAL
NET
REVENUE.**

In addition to the net earnings shown above, the Grand Trunk had an additional net revenue from other sources of:

Year	Net Revenue
1913.....	\$1,500,178
1914.....	3,244,963
1915.....	3,697,640

An average for the last three years for which figures are available of \$2,814,260.

PROBABLE INCREASE IN TRAFFIC.

The increase in traffic should at once be marked. As before stated, the Canadian Northern has no proper system of feeders in the East, nor has the Grand Trunk in the West. Each road is strong where the other is weak and the consolidation would materially help each.

The Canadian Northern has only been operating its Port Arthur - Toronto line and its Edmonton-Vancouver line for a portion of the year, and its North Bay-Montreal line not at all.

On Plates 4 to 8 showing the growth of the traffic, I have drawn curves showing an average increase of 8% per annum.

It will be noted that in Plate 6 showing the growth of the traffic on all Canadian roads, the 8% average increase has been materially exceeded, as it has also been by the growth of the combined traffic of the proposed combination, and, on the roads having large Western systems, it has been much exceeded.

It is true that in each case the curve has been started at a year (usually 1905) where the traffic was small as compared with its present amount. It is apparent that parallel curves started from any year, excepting such years when the traffic was so large as to form peaks, would have given results which would have been conservative. It therefore seems fair to assume, that an average increase of 8% per annum in the future would not be too great, provided it did not start from a year forming a peak.

In working out the probable financial results, the writer has therefore, used an average annual increase of 8%, and in order to be sure that the results for 1916 would not be such as to form a peak, has assumed the gross earnings of the combination to be \$100,000,000 instead of over \$110,000,000 as they actually are for 1916.

PROBABLE OPERATING RATIO.

In the foregoing statement of the yearly financial results, all of which are taken either from the annual reports of the roads, or from the Government statistics, the operating ratios of the Canadian Pacific run from a minimum of 61.96% in 1916 to a maximum of 69.92% in 1909, with an average of 65.88%.

The Grand Trunk runs from a maximum of 81.74% in the very bad year of 1914, to a minimum of 71.72% in 1909, with an average of 75.95%.

The Canadian Northern runs from a maximum of 77.72% in 1914 to a minimum of 64.95% in 1907, with an average of 71.3%.

The average for the whole Canadian System of Railways is 71.4%.

A great difference will be noted between the Grand Trunk, with an average of 75.95%, and the Canadian Pacific with an average of 65.88%. Aside from difference in management, if any, this is due to several causes—a small proportion is due to the fact that a great portion of the Canadian Pacific Railway traffic is in the west and the traffic rates are proportionately higher there than in the east, thus tending to reduce the proportion between operating expenses and gross receipts, or the "operating ratio". Much the greater part of it is due to the fact that the Grand Trunk has a much shorter haul on its traffic, thus much increasing the proportion which the cost of collecting the traffic, making it up into trains, and breaking up the trains and distributing it again, bears to the whole. This materially tends to increase the operating ratio.

The Canadian Pacific has, on the other hand, much through traffic between the east and the west, and much grain which is hauled for hundreds of miles without any disturbance to its trains, which materially tends to decrease the operating ratio.

The consolidation, when effected, will have the better system in the east, better main lines, a larger and almost as good a system in the west, and will do exactly the same class of business as the Canadian Pacific, so its operating ratio should, after a period of years, approximate that of the Canadian Pacific. The principal reason which prevents its reaching the Canadian Pacific low ratio is that the more expensive traffic on the Grand Trunk will always bear a larger proportion to the whole gross traffic of the consolidation, than will the Eastern traffic of the Canadian Pacific bear to its gross traffic.

In view of the fact that the average operating ratios of the different Canadian railways over a period of 10 to 12 years have been:

Canadian Pacific.....	65.88%
Canadian Northern.....	69.50 "
Grand Trunk.....	75.95 "

and the whole Canadian system of railways 71.4%,—it seems reasonable to assume that for the first three years the operating ratio should not exceed 75%, and after that 70%.

Much money would be required by the new consolidation.

PRESENT
VALUE OF
GRAND TRUNK.

The amount would depend, to a great extent, on what terms could be made with the Grand Trunk shareholders. Both the Canadian Northern and the Grand Trunk Pacific are practically bankrupt and their common stock is at present valueless.

The government should take them both over giving a small amount of stock in the new consolidation to the shareholders, and then turn the roads over to the new company on the same basis. The Grand Trunk is, however, in a different position. It is earnings a great deal more than its Fixed Charges and its share capital would have to be acquired. The following is a statement of the share capital with the latest quotations in London and the present value on that basis:

Stock	Amount	Rates of Quotations	Present Value
Guaranteed	£12,500,000	56½	£7,062,500
1st Pref.	3,420,000	64	2,188,800
2nd Pref.	2,530,000	55	1,391,500
3rd Pref.	7,168,005	23½	1,684,481
Ordinary Stock	23,318,309	9¾	2,273,535
equivalent to			£14,600,816
			\$71,105,973

The total present value of the stock is thus \$71,105,973.

From 1910 to 1915 the Grand Trunk have paid dividends on this stock amounting to an average of \$3,465,360, per annum, the maximum being \$4,707,812 and the minimum \$2,130,625.

It might be that the shareholders would be satisfied to take preferred stock, or some other form of securities, in the new consolidation, in exchange for their present securities. In any event, \$85,000,000 should be an amply large valuation.

CONSTRUCTION AND BETTERMENTS.

It is, of course, impossible, without a detailed examination, to make even an approximate estimate of the money requirements to put these roads in proper shape. Some of the things that would have to be done are as follows:

A new line, head of Long Lake on the Canadian Northern Railway, to Titania on the National Transcontinental.

Improvements and betterments to existing lines, especially to the Canadian Northern lines in the West.

Separation of railway and streets grades, Montreal and Toronto.

Completion of the Canadian Northern entrance to Montreal.

Numerous connections between the various roads and extensive additions to the rolling stock.

Judging by the experience of the Canadian Pacific \$100,000,000 judiciously expended in, say, five years, should be sufficient to put the Consolidation firmly on its feet.

The Canadian Pacific commenced the re-construction and improvement of its road in 1902.

For this purpose it issued new common stock at par, as follows:

Issued March 27, 1902.....	\$19,500,000
" Oct. 27, 1904.....	16,900,000
" Apr. 1, 1906.....	20,280,000
" July 13, 1908.....	24,336,000
Sold during 1908 and 1909.....	3,984,000
Total.....	\$85,000,000

If the proceeds of \$85,000,000 new common stock sold at par was sufficient for the Canadian Pacific for seven years, at a time when it was in much worse physical condition than are, on the average, the Grand Trunk, Grand Trunk Pacific and Canadian Northern Railways, then \$100,000,000 ought to be amply sufficient for the proposed consolidation for four or five years, or until such time as it would be financially on its feet.

MONEY
REQUIRE-
MENTS.

If it were found necessary to acquire the total share capital of the Grand Trunk, the money requirements would be:

To acquire Grand Trunk share capital.....	\$ 85,000,000
Improvements and betterments to be spread over, say 5 years.....	100,000,000
Total.....	\$185,000,000

FIXED
CHARGES.

GRAND TRUNK.

The Fixed Charges for the Grand Trunk for the year ended Dec. 31, 1915, amounted to..... \$ 9,886,183

Since that date it has arranged the following financing:

\$1,000,000 3 yr. 5½% notes. Interest	55,000
4,000,000 2 " 5 % " "	200,000
Making its Fixed Charges at end of 1916.....	
	\$10,141,183

GRAND TRUNK PACIFIC.

The Canadian Railway Statistics for the year ended June 30, 1916, show Grand Trunk bonds outstanding.... \$173,782,100

Of this amount it is understood that £7,200,000 is at 3%, and the balance at 4%, making its Fixed Charges of June 30, 1916..... 6,600,644

In 1916 its deficit amounted to \$5,529,740. At its ordinary rate of interest (4%) this would add..... 211,190

Making its Fixed Charges at end of 1916, a total of. 6,811,834

CANADIAN NORTHERN

As previously shown, the Fixed Charges on the Canadian Northern, when construction is completed, would probably amount to..... \$13,400,000

NATIONAL TRANSCONTINENTAL.

The Stanton-Gutelius Report on the National Transcontinental Railway, estimated the rental which would be due the Government of Canada, under the original arrangements made with the Grand Trunk Railway, to be yearly..... \$5,400,000

This rental was not to commence until a period of seven years had elapsed after the final completion of the road.

One of the arrangements the new Company to be formed should make with the Government, would be, that this rental should not commence until seven years after the Consolidation had been formed.

The total Fixed Charges at the time Consolidation went into effect would thus be:

Grand Trunk.....	\$10,141,183
Grand Trunk Pacific.....	6,811,834
Canadian Northern.....	13,400,000
Interest on cost of Grand Trunk (\$85,000,000 at 5%).....	4,250,000
 Total.....	\$34,603,017
To which would be added, after seven years,— Rental, National Transcontinental.....	\$5,400,000

The conditions under which the Consolidation would commence business, would be as follows:

PROSPECTS FOR THE CON- SOLIDATION.	The Gross Earnings should not be less than.....	\$100,000,000
	(They actually were in 1916, over.....)	\$110,000,000
	The increase in Gross Earnings should not be less than 8% per annum.	

\$85,000,000 should be sufficient to buy out the Grand Trunk Shareholders.

The expenditure of \$100,000,000 spread over five years, should be sufficient to put the Consolidation in first-class physical condition, and to provide sufficient rolling stock.

It should be possible to raise the necessary \$185,000,000, with a guarantee of interest by the Canadian Government, on a 5% basis.

It should be possible to make an arrangement with the Government, similar to the one it made with the Grand Trunk Pacific, that no rental be charged for the Transcontinental for seven years after Consolidation.

The Operating Ratios should not exceed 75% for the first three years, and 70% thereafter.

The Grand Trunk net revenue from other sources should continue to be as large as it has been on the average for the last three years for which figures are available, viz. \$2,814,300.

Fixed Charges should not, at the time of Consolidation, exceed \$34,600,000.

If all of these assumptions are conservative, (and they appear to be) the average financial results for the first eight years should be as follows:

PROBABLE FINANCIAL RESULTS.

Gross Earnings of Roads at Consolidation.... \$100,000,000

First Year.

Total Gross Earnings.....	\$108,000,000
Operating Ratio 75%, Net Earnings 25%.....	\$27,000,000
Fixed Charges at Consolidation.....	34,600,000
Interest at 5% on \$20,000,000 to be expended.	1,000,000

Total Fixed Charges 1st year.....	35,600,000
Operating loss.....	8,600,000
Less, Net Revenue Grand Trunk	2,814,300
Deficit	\$5 785,700

Second Year.

Total Gross Revenue.....	\$116,640,000
Operating Ratio 75%, Net Earnings 25%.....	\$29,160,000
Fixed Charges 1st Year.....	35,600,000
Interest at 5% on \$20,000,000 to be expended	1,000,000
Total Fixed charges 2nd year.....	36,600,000
Operating loss.....	7,440,000
Less, net revenue Grand Trunk.....	2,814,300
Deficit	\$4,625,700

Third Year.

Total Gross Earnings.....	\$126,000,000
Operating Ratio 75%, Net earnings 25%.....	\$31,500,000
Fixed Charges 2nd year.....	36,600,000
Interest at 5% on \$20,000,000 to be expended	1,000,000
Total Fixed Charges 3rd year	37,600,000
Operating Loss.....	6,100,000
Net Revenue Grand Trunk	2,814,300
Deficit	\$3,285,700

Fourth Year.

Total Gross Earnings.....	\$136,080,000
Operating Ratio 70%, Net earnings 30%.....	\$40,824,000
Fixed Charges 3rd year.....	37,600,000
Interest at 5% on \$20,000,000 to be expended	1,000,000
Total Fixed Charges 4th year	38,600,000
Operating Gain.....	2,224,000
Net Revenue Grand Trunk	2,814,300
Surplus.....	\$5,038,300

Fifth Year.

Total Gross Earnings.....	\$146,960,000
Operating Ratio 70%, Net Earnings 30%.....	\$44,088,000
Fixed Charges 4th year.....	\$38,600,000
Interest at 5% on \$20,000,000 to be expended	1,000,000
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Total Fixed Charges 5th year.....	39,600,000
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Operating Gain.....	\$4,488,000
Net revenue Grand Trunk.....	2,814,000
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Surplus.....	\$7,302,000

Sixth Year.

The full \$100,000,000 has now been expended.

Total gross earnings.....	\$158,720,000
Net earnings 30%.....	\$47,616,000
Fixed Charges.....	39,600,000
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Operating Gain.....	\$8,016,000
Net Revenue Grand Trunk.....	2,814,300
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Surplus.....	\$10,830,300

Seventh Year.

Total Gross Earnings.....	\$171,410,000
Net Earnings 30%.....	\$51,423,000
Fixed Charges.....	39,600,000
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Operating gain.....	\$11,823,000
Net revenue Grand Trunk.....	2,814,300
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Surplus.....	\$ 14,637,300

Eighth Year.

Total Gross Earnings.....	\$185,120,000
Net Earnings 30%.....	\$55,536,000
Fixed Charges.....	39,600,000
Rental National Transcontinental.....	5,400,000
Total Fixed Charges.....	45,000,000
Operating Gain.....	\$10,536,000
Net Revenue Grand Trunk.....	2,814,300
Surplus.....	\$13,350,300

If the operating ratio should not be better than 73% after the 3rd year there would still be a surplus of about \$1,000,000 in the 4th year, and about \$8,000,000 in the 8th year.

From the foregoing it is evident that it is only by the greatest of care and economy both in capital expenditure and in operation, that the roads can be made to pay at all. Advantage must be taken of every favorable circumstance, and each part of the system must help the other in order that the whole should prosper. No more duplication of lines, waste in construction, or unjustifiably low rates can be tolerated, or the result will be disaster from which the roads cannot recover.

It is also quite evident that any attempt to develop two independent systems necessitating as it will, an additional expenditure of at least \$300,000,000 with \$15,000,000 additional yearly Fixed Charges must result in failure. If, in the foregoing calculations of the probable financial results, \$15,000,000 be added to the already large Fixed Charges, the results would be deficits amounting to about \$85,000,000 in the first eight years, and this without figuring any interest whatever.

Whether the results of such a combination would be as favorable as have been outlined, is, of course, a matter of opinion. It depends on the growth of the traffic, the amount of additional capital required, and on the ability of officials to keep the operating ratio not higher than 73% after the first few years. There cannot, however, be any question

that such a combination offers the best chance of success. As each of the component parts is strongest where the other is weakest, combining them must, of necessity, give the least cost to complete, and consequently, the least Fixed Charges, and the high Fixed Charges are the big stumbling block in the way of success.

There are, of necessity, many details which have not been touched. There is the question of how the combination could best be brought about. It seems likely that in order to straighten out all the legal and financial troubles, that Receivers should first be appointed for the Canadian Northern and the Grand Trunk Pacific Railways.

When the combination was formed it would, undoubtedly, be found advisable to abandon some of the duplicate lines. From Edmonton to the Yellowhead Pass, a distance of 250 miles, the Grand Trunk Pacific and the Canadian Northern run side by side, and there certainly is not business enough for half a road, let alone two, the least valuable one should undoubtedly be taken up. From Toronto to Napanee, 135 miles, three roads run side by side, one of them should be taken up.

The Canadian Northern has many miles of road in Eastern Canada which do not pay operating expenses, and which have been purchased by them from other parties. It is likely some of these could, with profit, be returned to the bondholders. All such questions require detailed examination before they could be passed upon.

Once the present railway problem be settled Canada should once and forever, abandon the policy of bonusing railway construction. The Dominion Statistics for the year ended June 30, 1915, shows that Canada, the Provinces and the Municipalities have paid to the railways by way of subsidies, cost of lines built and turned over to the companies, and by subscription to their shares, \$204,053,862; have loaned them \$35,178,061; have purchased \$33,116,000 of their bonds; have granted them lands to the extent of 43,929,312 acres; have authorized guarantees to the extent of \$409,869,165, of which the bonds have been executed to the extent of \$350,622,918, and the guarantees earned to the extent of \$273,642,663.

After the granting of this stupendous aid to the railways the result is, there is only one really successful road in Canada, the Canadian Pacific. The Grand Trunk Pacific and the Canadian Northern are practically bankrupt. It costs the roads, owned and operated by the Dominion, \$200 to \$220 to earn \$100; and though practically all of the arable land in the public domain in the Northwest has been alienated, not 15% has been settled and improved, and the grain produced comes from an acreage of less than 10% of this arable land.

Surely it is time Canadians should stop and consider whither they are drifting, and demand a sharp reversal of a railway policy that has led to such unfortunate results.

Montreal, February 1917.

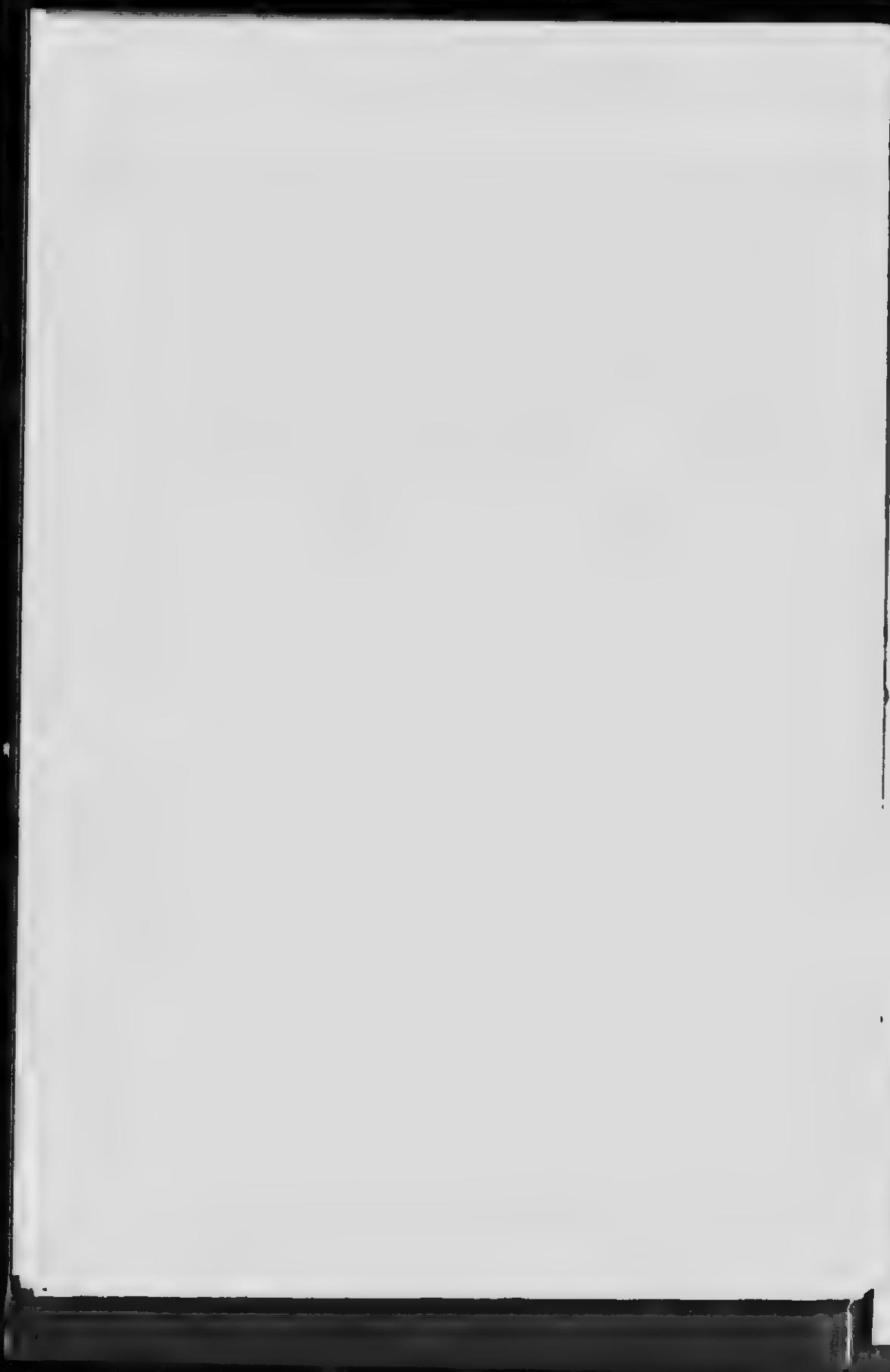
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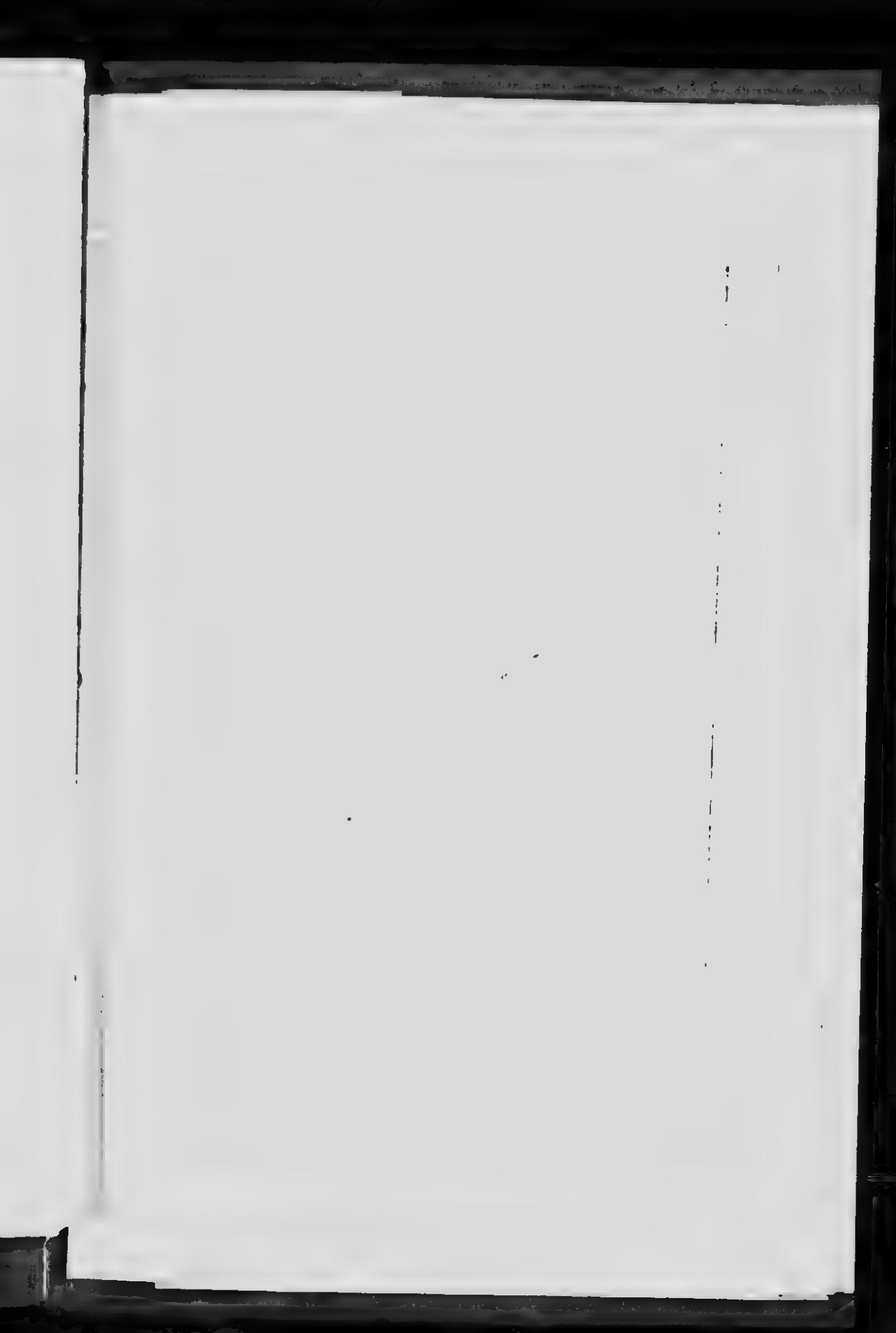
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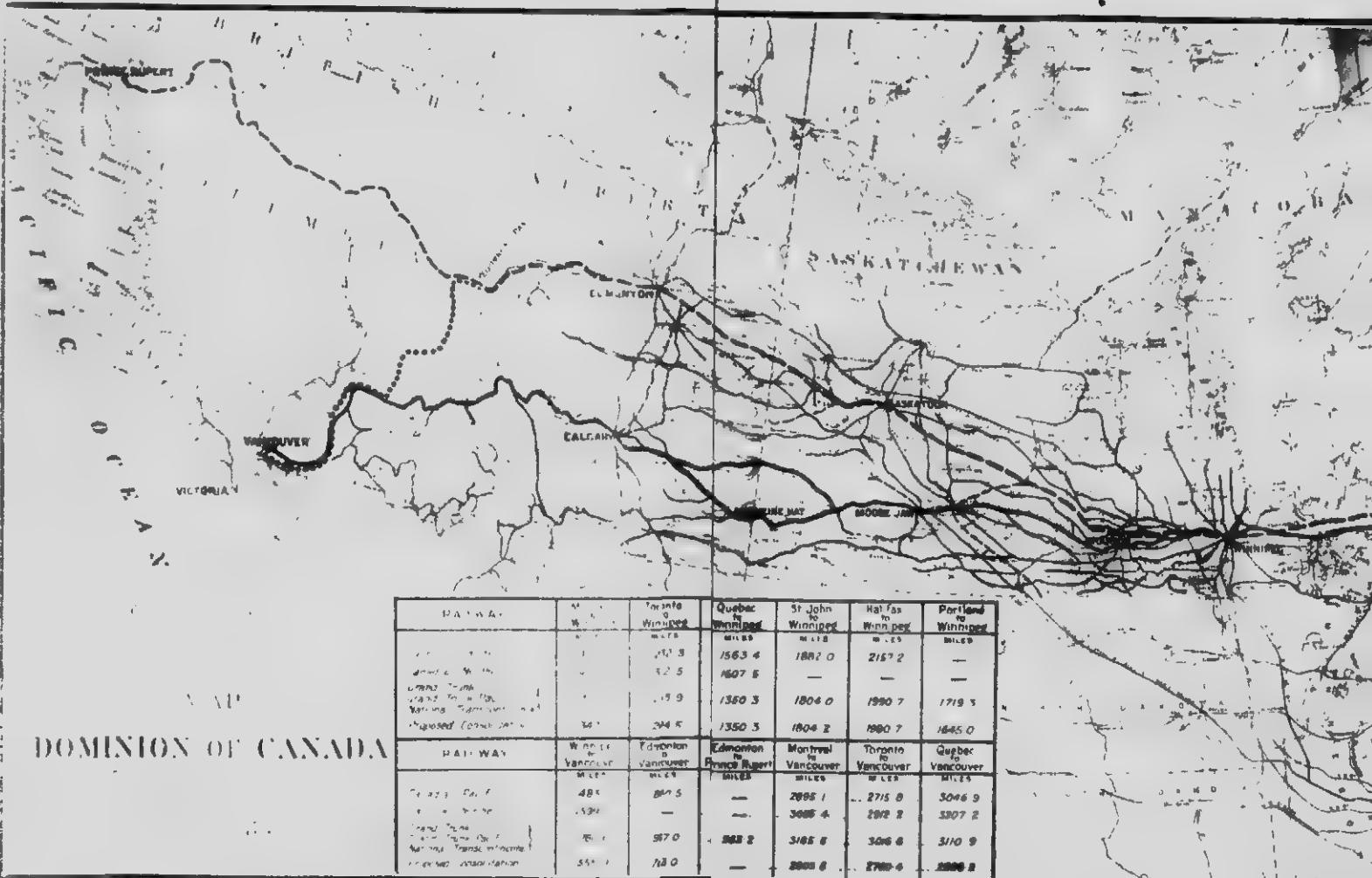
THE MODERN PRINTING CO.,
MONTREAL.

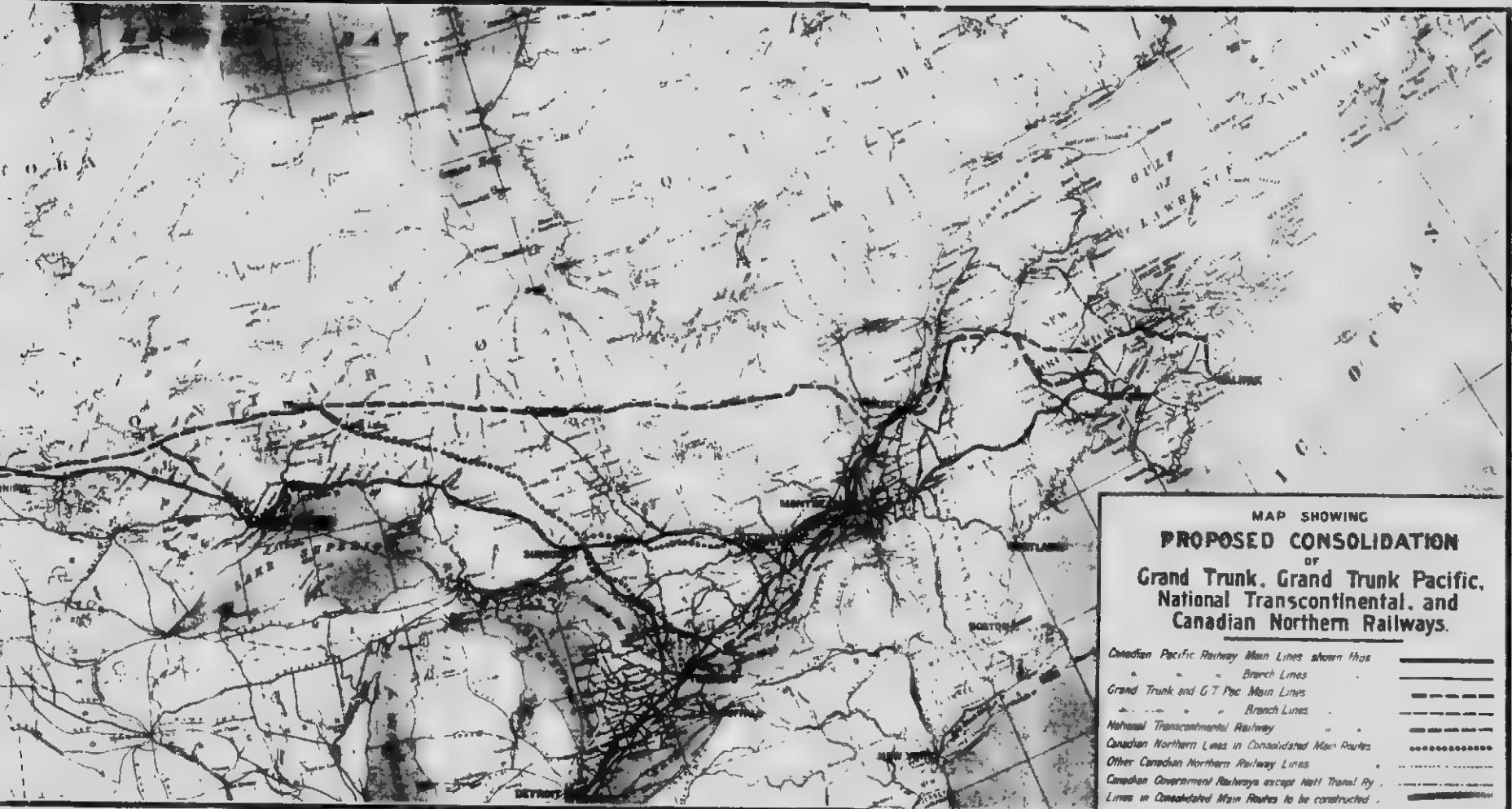






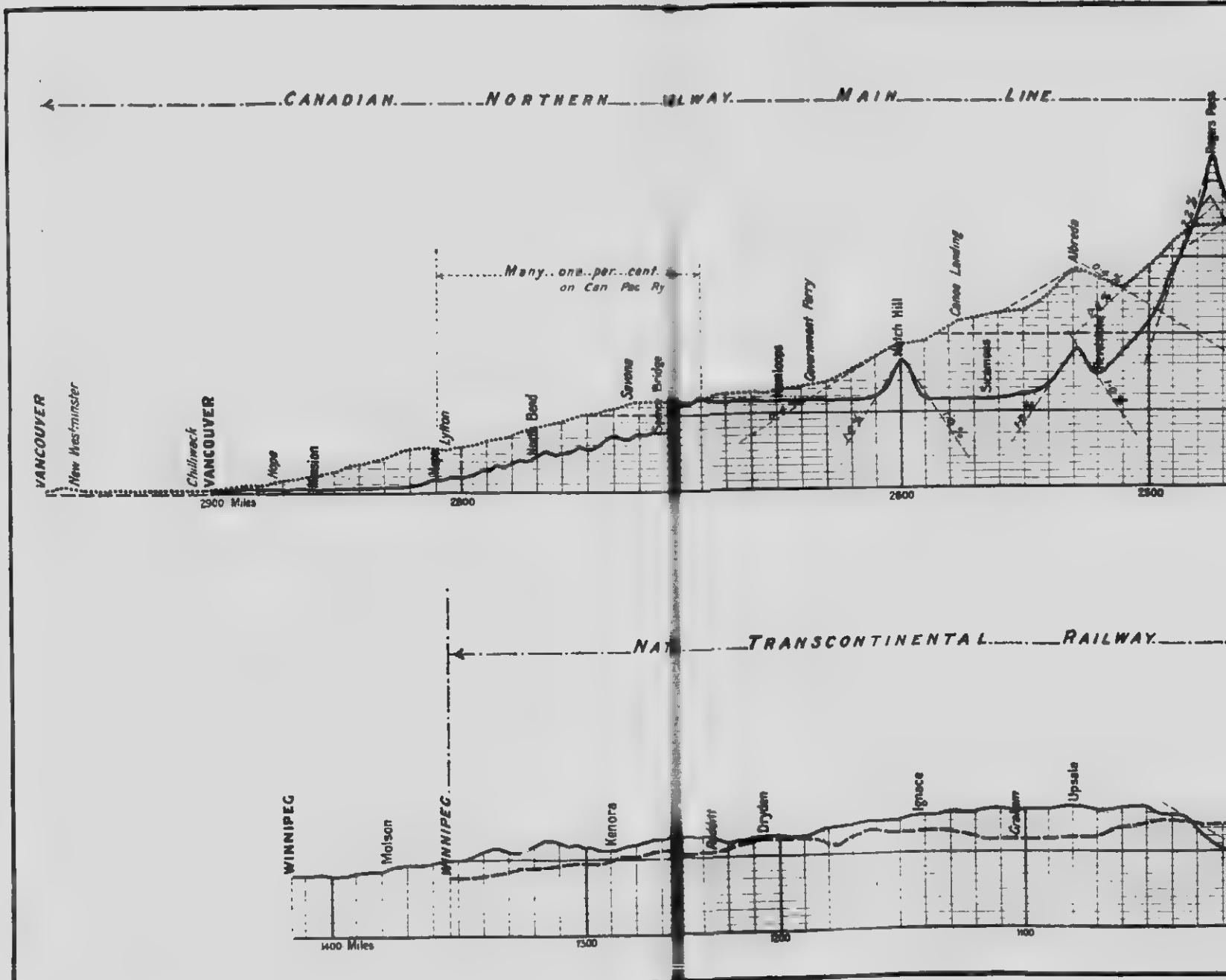


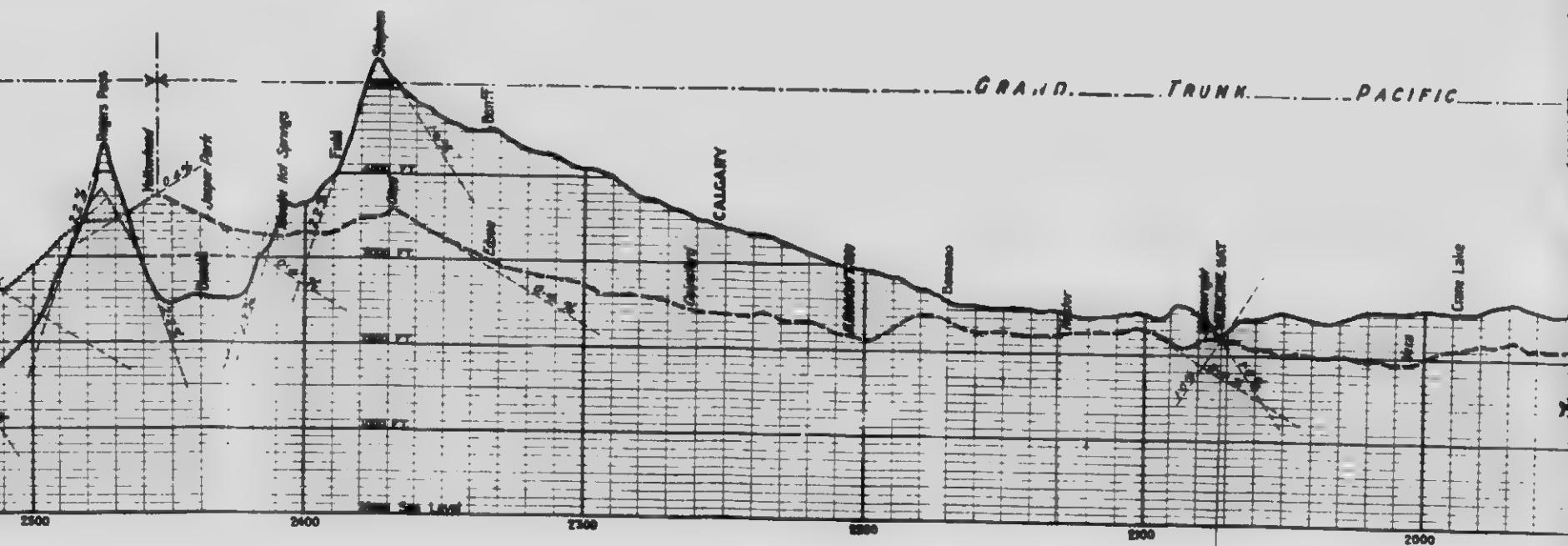






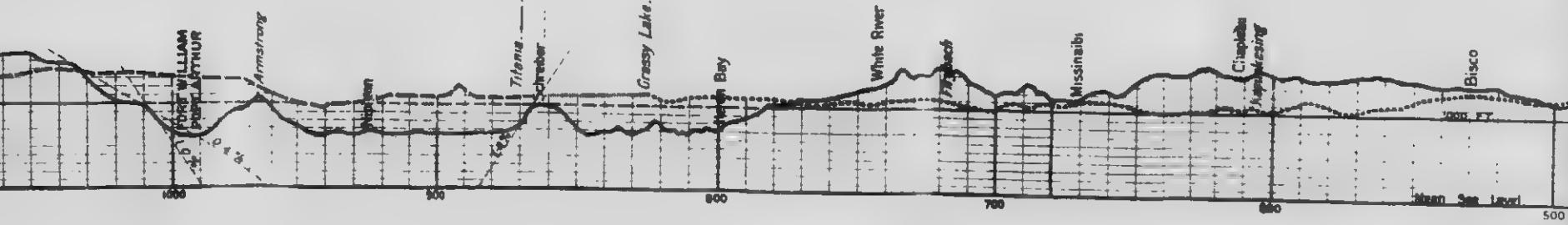




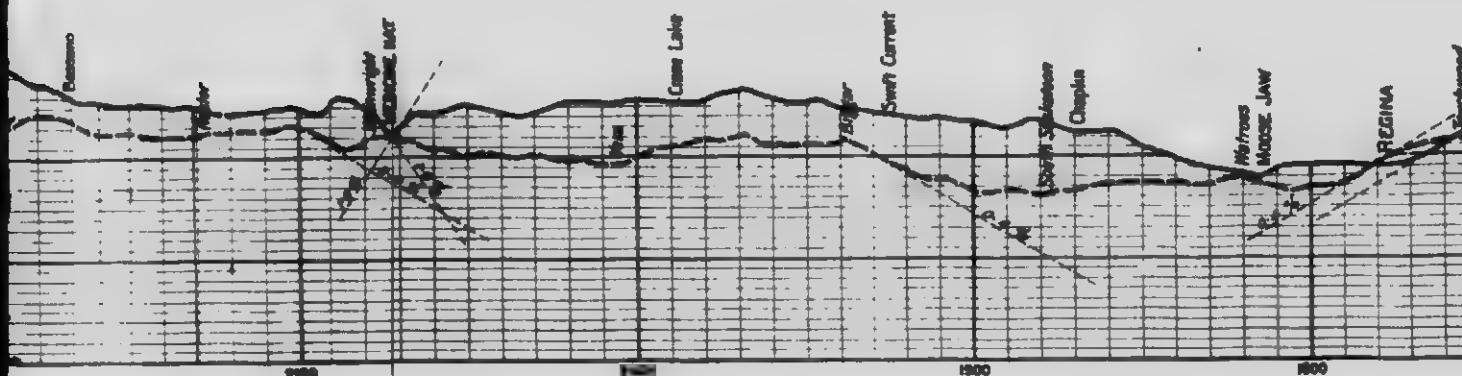


*Connecting Line
to be constructed
about 43 Miles.*

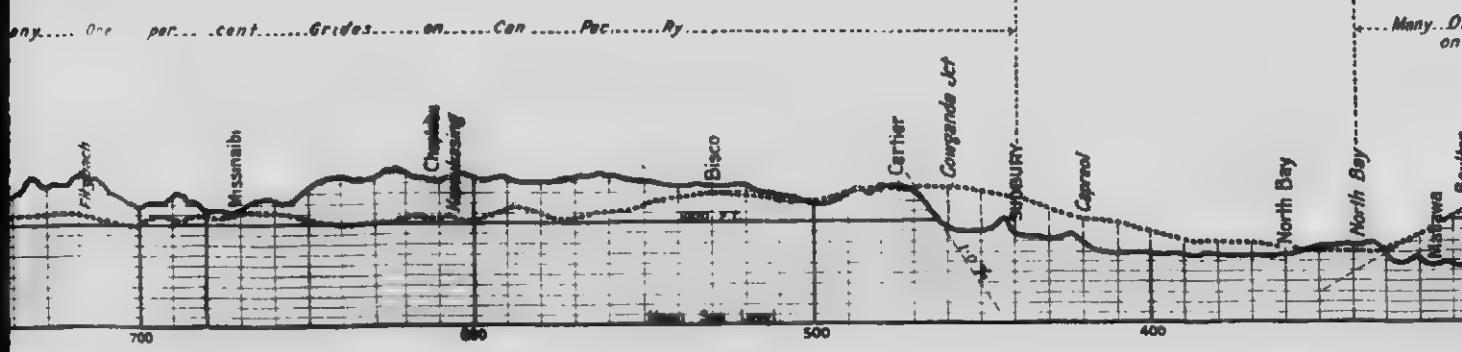
Many... One... per cent.... Grades... on... Can... Pac... Ry



GRAND. TRUNK. PACIFIC RAILWAY. MAIN. LINE.



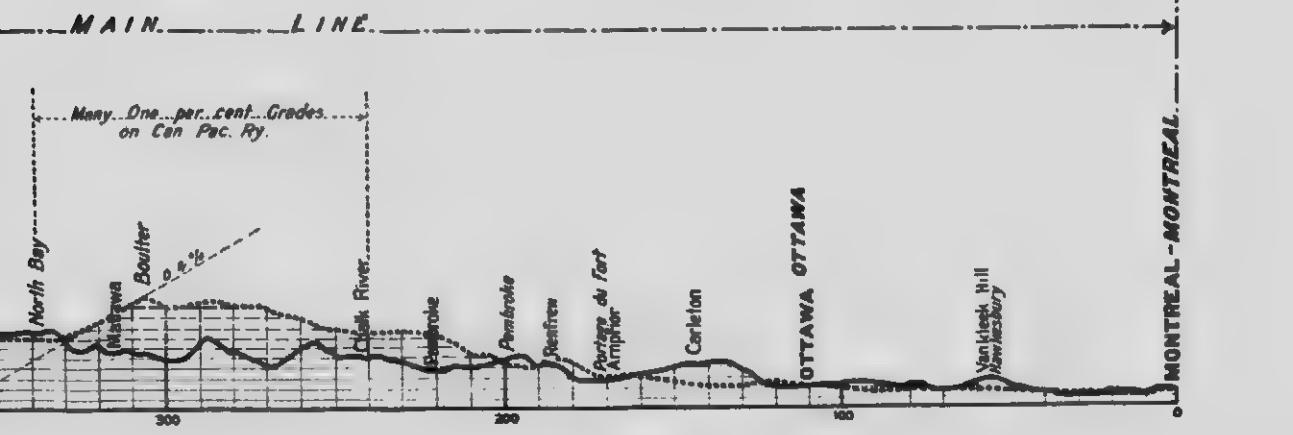
CANADIAN NORTHERN RAILWAY. MAIN.

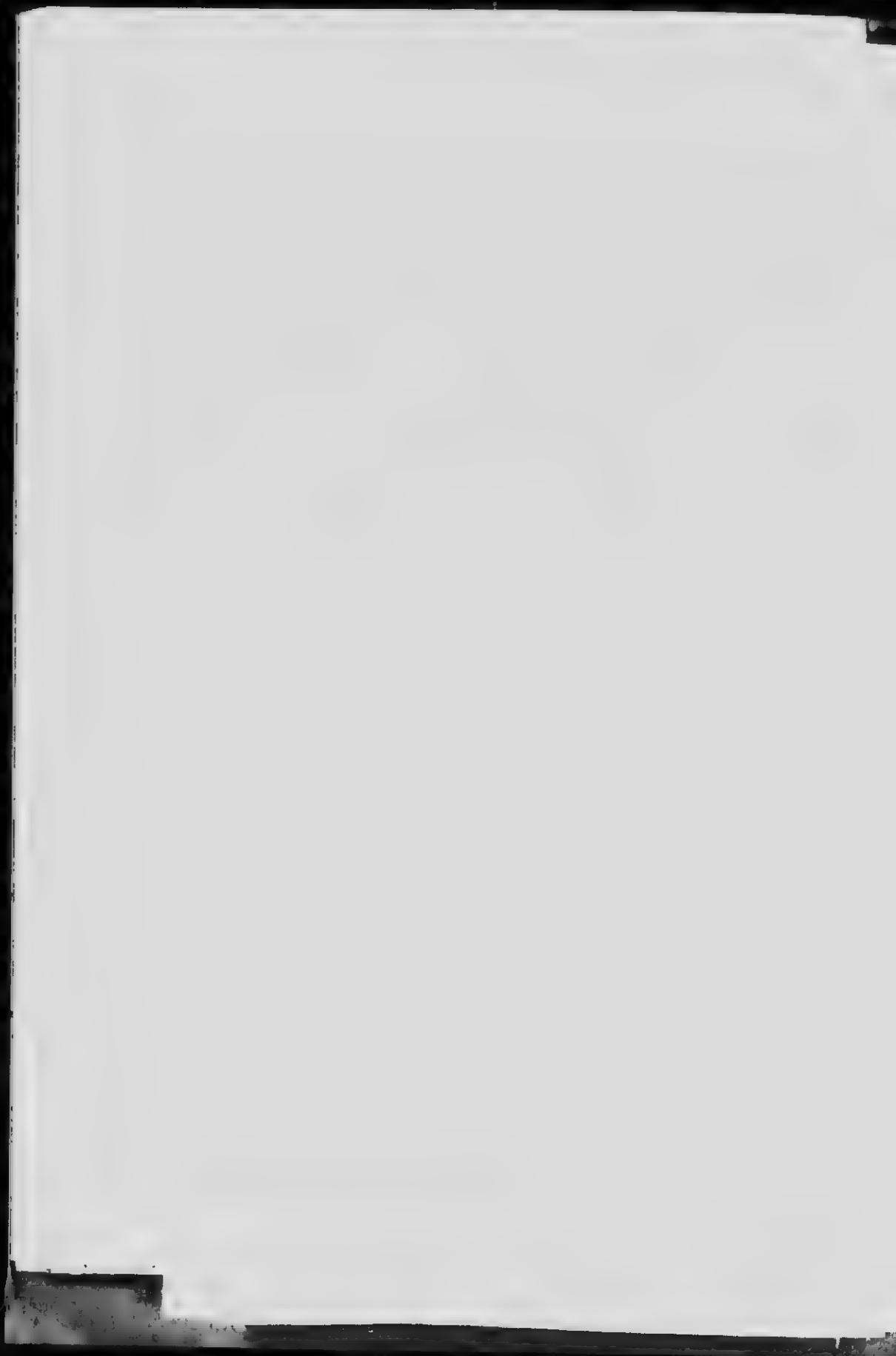


CONDENSED PROFILE SHOWING COMPARISON OF
CANADIAN PACIFIC RAILWAY
 WITH
PROPOSED CONSOLIDATION
 of Grand Trunk Pacific, National Transcontinental,
 and Canadian Northern Railways.



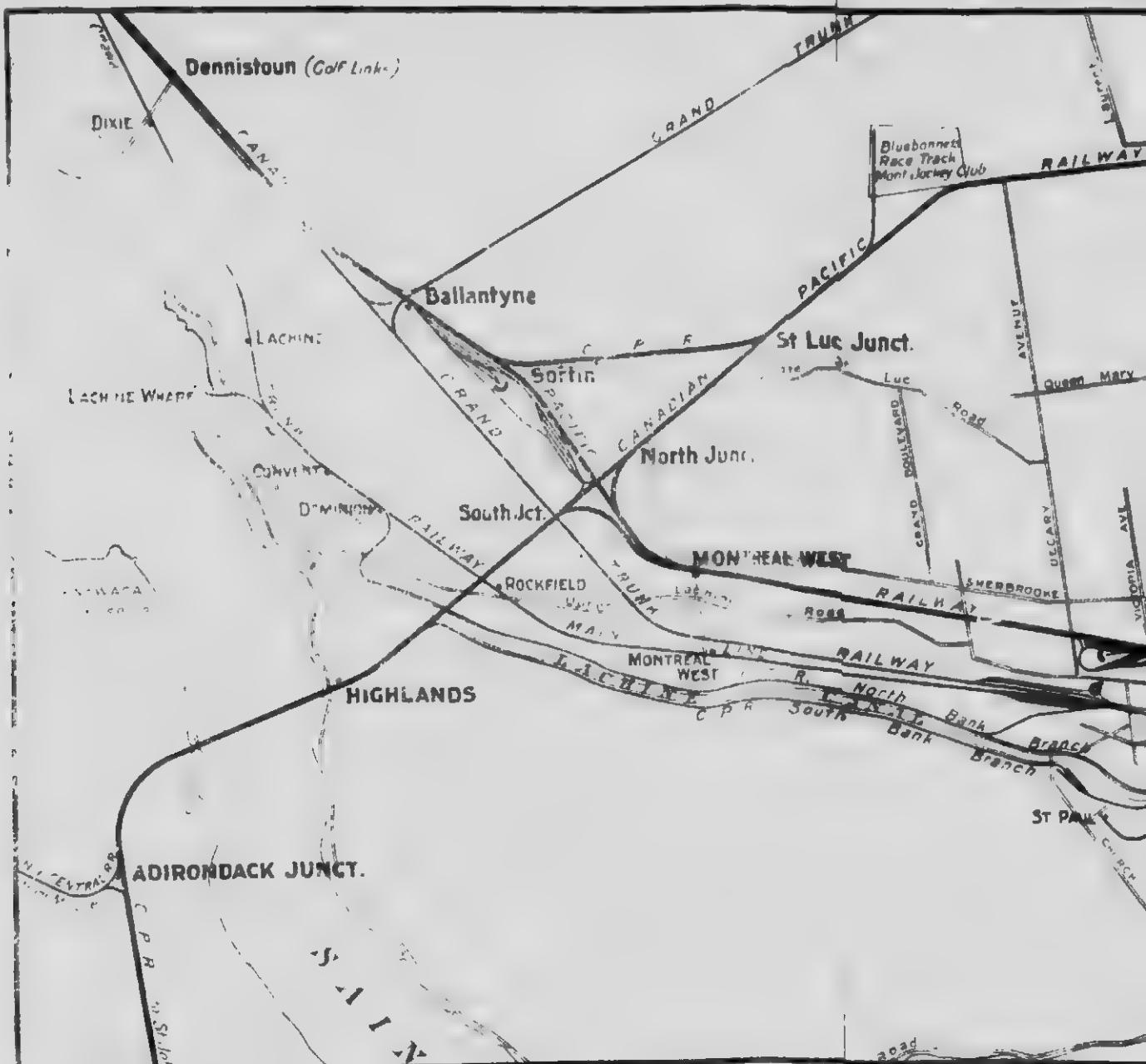
Canadian Pacific Railway shown thus ————— with Station names in upright lettering.
 Grand Trunk Pacific Ry. ——————
 National Transcontinental Ry. ——————
 Canadian Northern Ry. —————— with Station names in sloping lettering





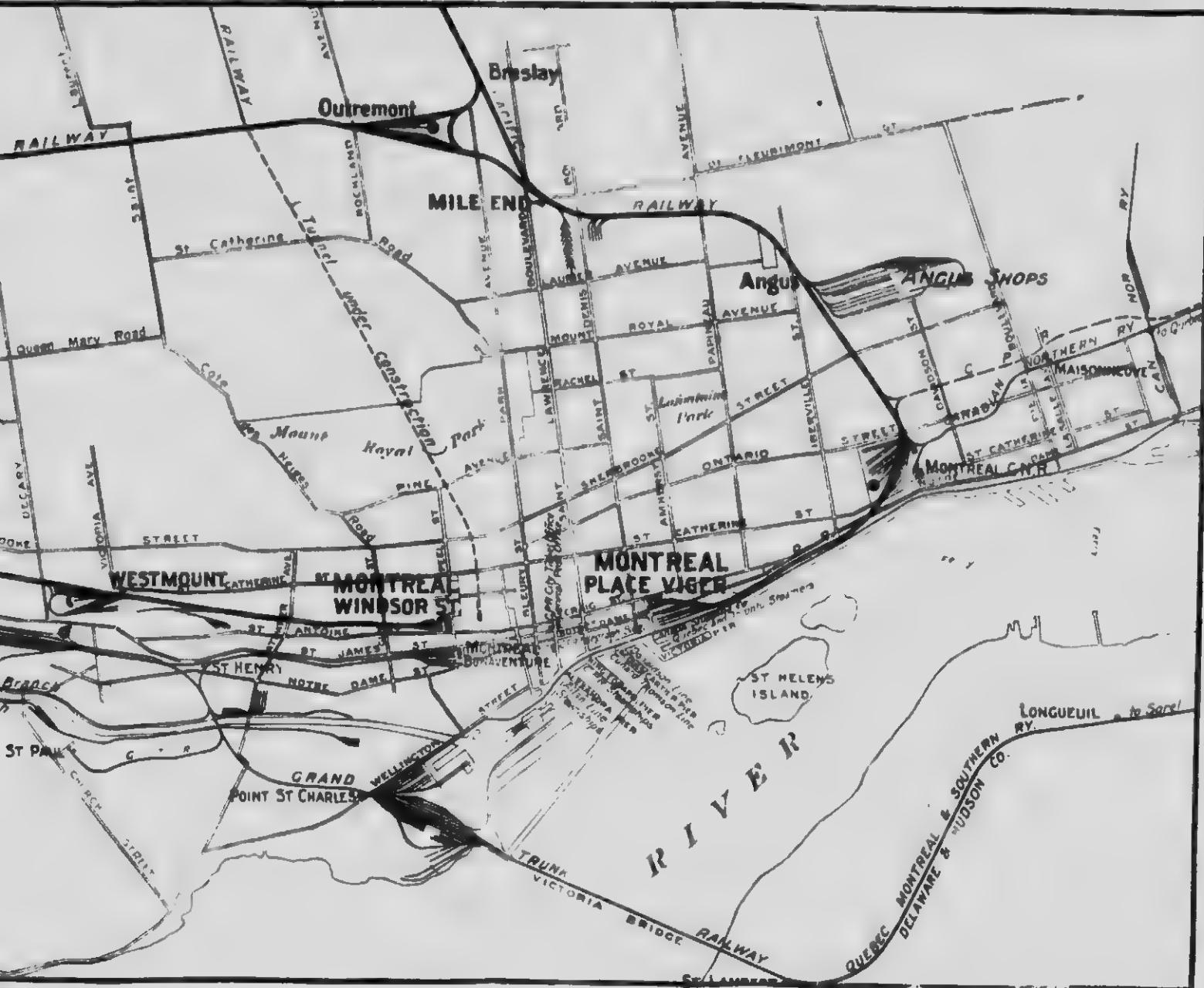


PLAN OF MONTREAL



Montreal Terminals

PLATE III



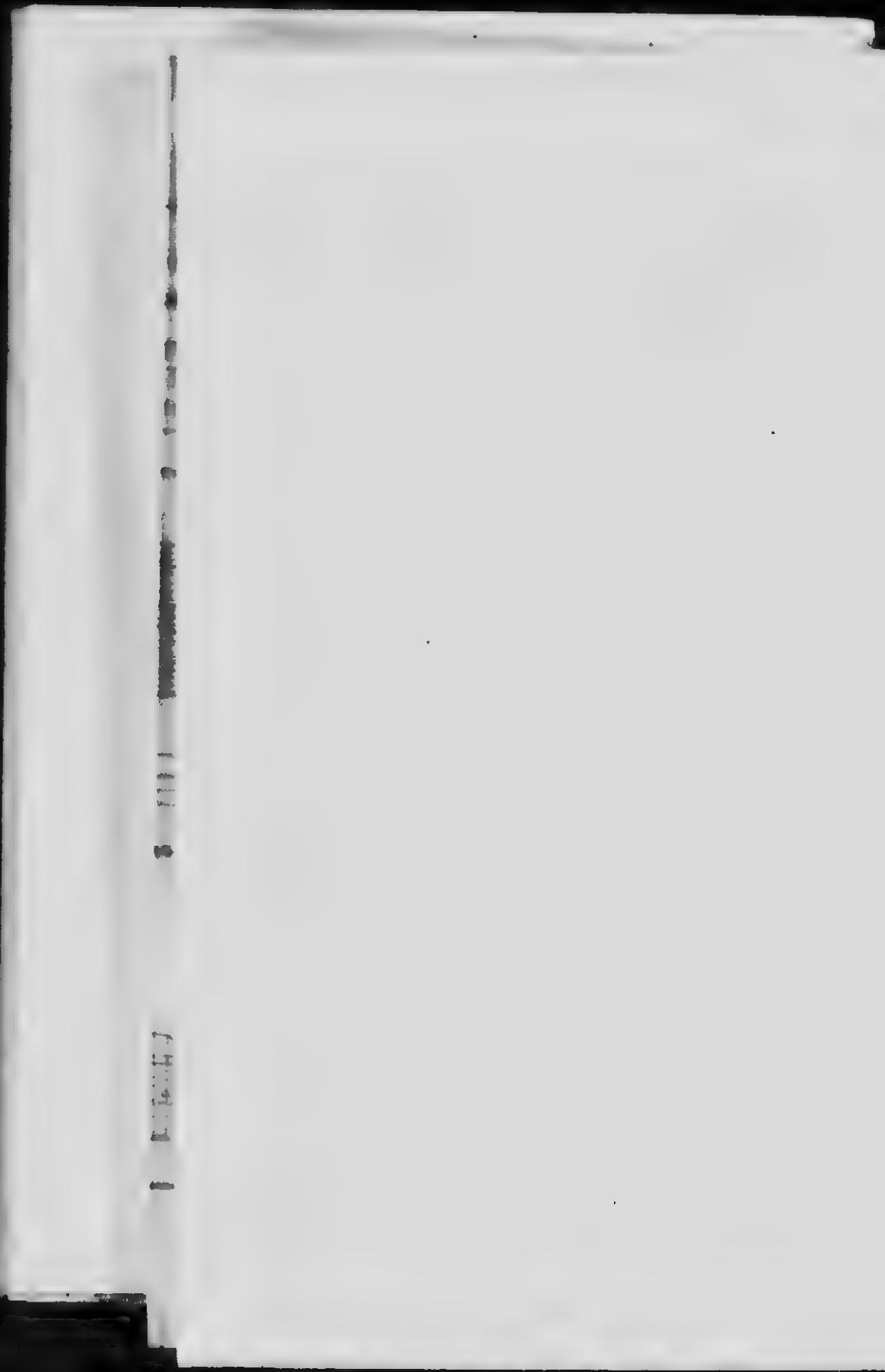


PLATE IV

CANADIAN PACIFIC RAILWAY
DIAGRAM
SHOWING GROWTH OF
GROSS EARNINGS.

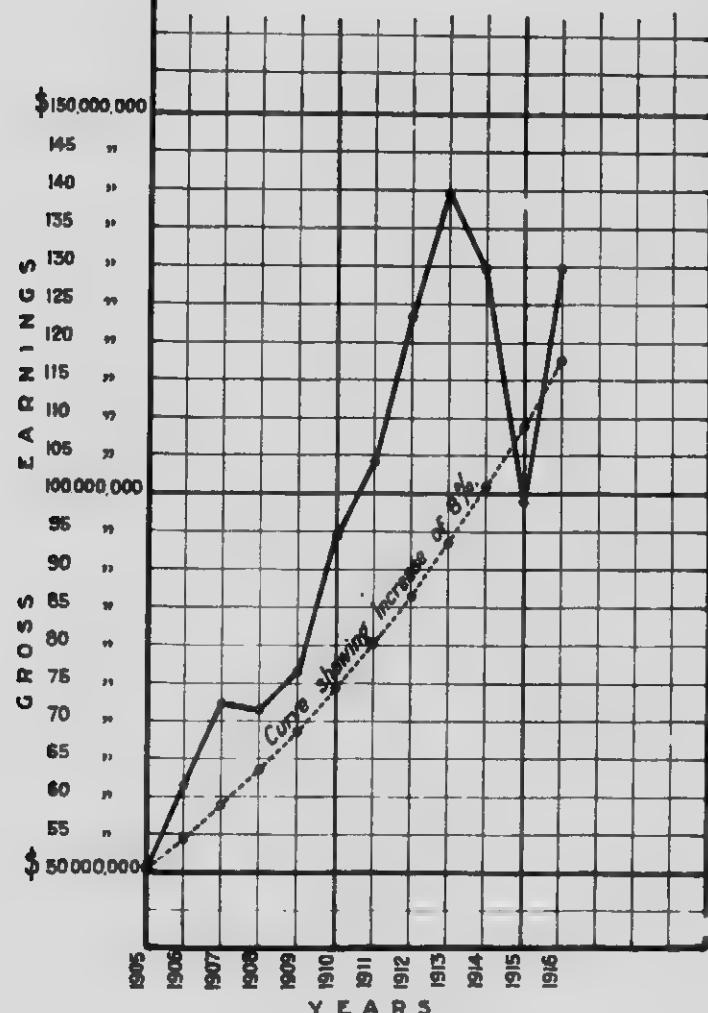




PLATE V

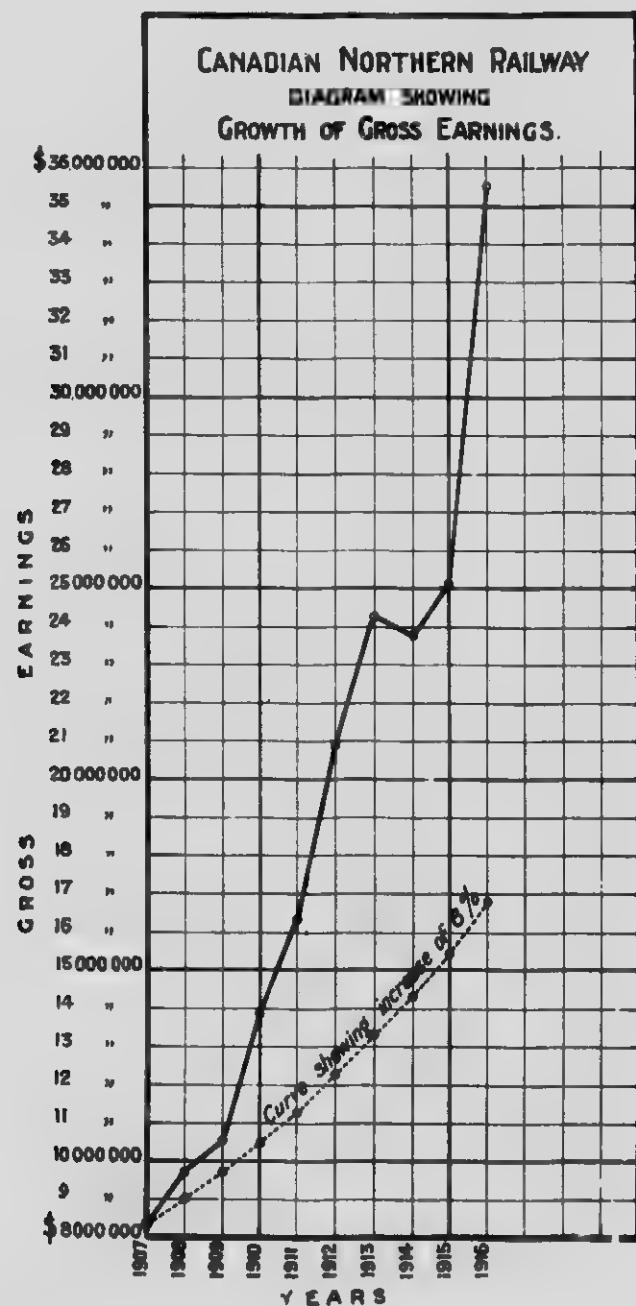




PLATE VI

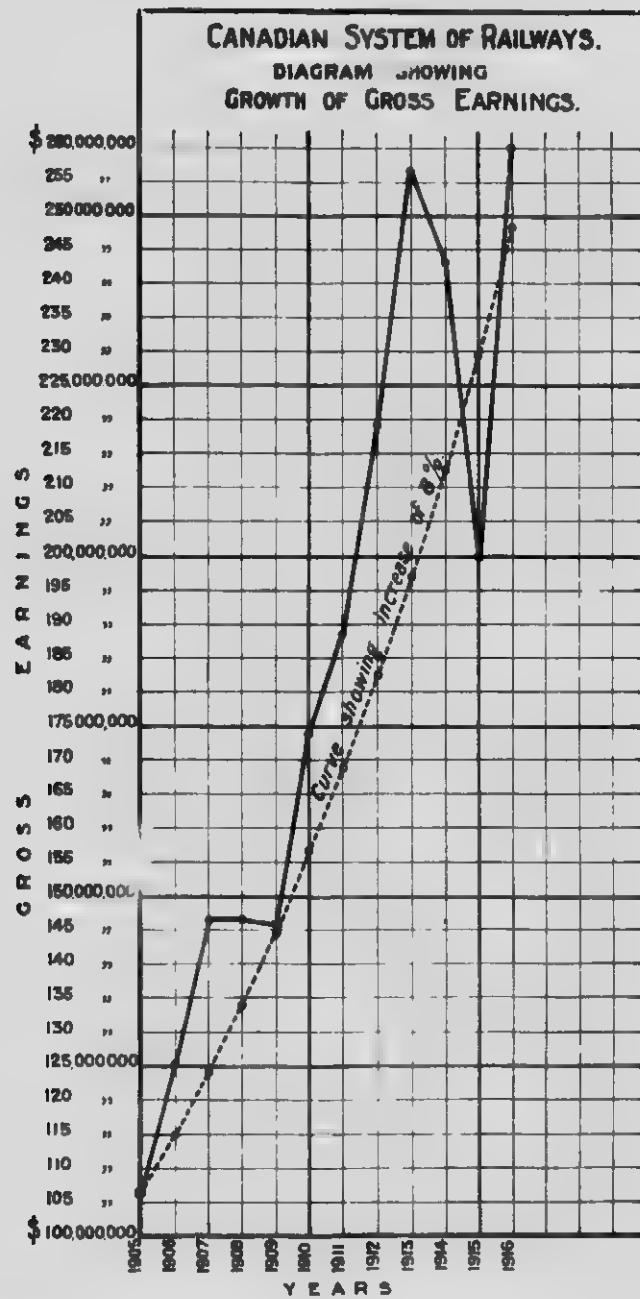




PLATE VII

GRAND TRUNK RAILWAY
AND
CANADIAN NORTHERN RAILWAY
DIAGRAM SHOWING GROWTH
OF COMBINED GROSS EARNINGS.

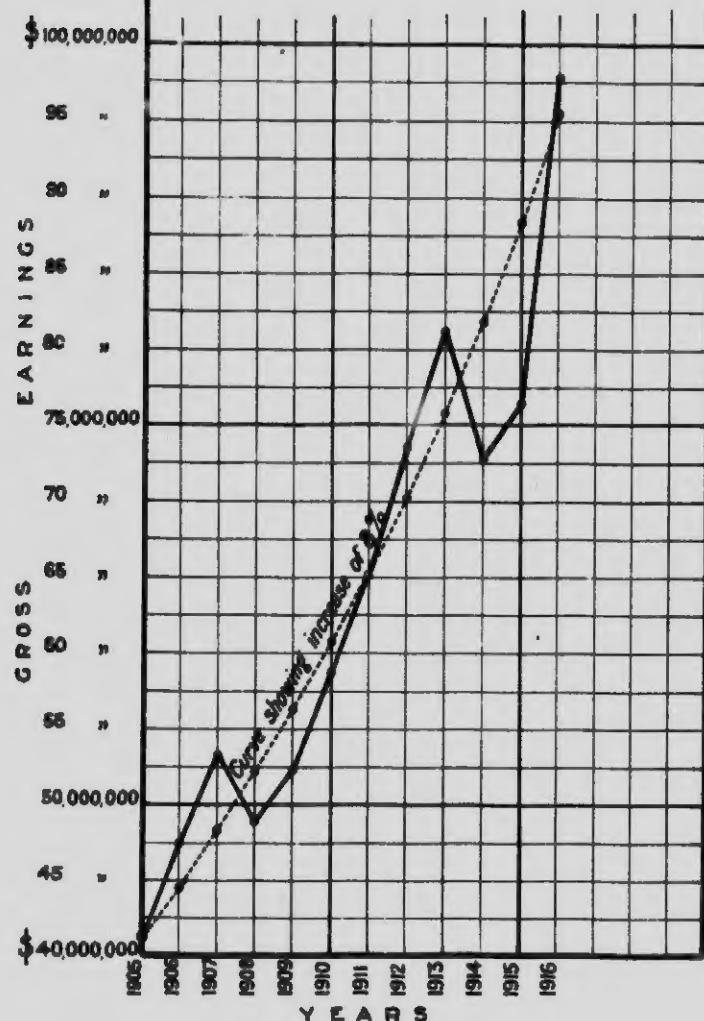




PLATE VIII

GRAND TRUNK, GRAND TRUNK PACIFIC,
NATIONAL TRANSCONTINENTAL, AND
CANADIAN NORTHERN RAILWAYS.
DIAGRAM SHOWING GROWTH OF
COMBINED GROSS EARNINGS.

